

ANNUAL GROUNDWATER EXTRACTION SYSTEM PERFORMANCE REPORT HELENA, MONTANA

Prepared For:

CITY OF HELENA
HELENA, MONTANA



Hydrometrics, Inc.
consulting scientists and engineers

NOVEMBER 2010

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Dept. of Enviro. Quality
Waste & Underground
Tank Management Bureau

Mr. Martin Van Oort
Environmental Science Specialist
Solid Waste Regulatory Program
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Dear Martin,

On behalf of the City of Helena, I am submitting the annual groundwater extraction system performance report for the City of Helena Landfill, plant ID 049 0014. The groundwater extraction system was installed in the spring of 2000 and is located just north of the landfill boundary. This treatment system includes three extraction wells (HL-99-1, HL-99-2, and HL-99-3) to intercept tetrachloroethene (PCE) impacted groundwater migrating downgradient of the landfill. The extracted groundwater is pumped through aeration nozzles into two lined ponds located on Bill Roberts Golf Course. In accordance with regulations, the treated water is sampled monthly to ensure the treatment goals have been met prior to land application on the golf course.

The groundwater extraction system operated April 20, 2010 through October 6, 2010 for a total of 168 days. A new pump was installed in well HL-99-1 prior to startup. Several tables showing all the data collected at the groundwater extraction system over the last year and calculation performed with that data are included as Attachment A to this report. A summary of the operational data is shown in Table 1. With a combined average flow of 75.2 gpm from the three extraction wells, a total of 18 million gallons of groundwater were extracted and treated this year.

Table 1. Summary of Operational Data

Extraction Well	Days Operated	Average Flowrate (gpm)	Total Volume Removed (gal)
HL-99-1	167.8	9.3	2,247,221
HL-99-2	167.8	28.5	6,887,657
HL-99-3	164.8*	37.4	8,873,898
Total	168	75.2	18,008,776

*This well was turned off for approximately 3 days in August for repairs.

Groundwater samples are collected in December and June from each of the extraction wells. The field book notes, sampling forms and lab reports for this sampling were included in the December and June data validation reports you have already received. Table 2 includes a summary of the sample results. Only those parameters that were detected in at least one extraction well during the December 2009 or June 2010 sampling events were included. Assuming a conservative treatment level of 0.0005 mg/L for each compound and the total volume pumped for each well, the estimated mass of volatile organic compounds (VOCs) removed from each well was calculated. These values are also shown in Table 2.

Table 2. Extraction Well Sample Results and Mass of VOCs Removed

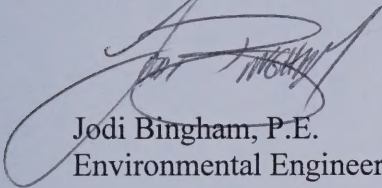
VOC	HL-99-1		HL-99-2		HL-99-3		Total	
	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)	Average Conc. (mg/L)	Mass Removed (kg)
1,1-Dichloroethane	<0.001	0.0000	0.0023	0.0456	0.0026	0.0705	0.0020	0.1162
Chloroform	0.0031	0.0221	0.0017	0.0300	0.0023	0.0605	0.0024	0.1126
Cis-1,2-dichloroethane	0.0020	0.0128	<0.001	0.0000	<0.001	0.0000	0.0013	0.0128
Dichlorodifluoromethane	<0.001	0.0000	0.0014	0.0222	0.0014	0.0285	0.0012	0.0507
Tetrachloroethene (PCE)	0.0031	0.0221	0.0055	0.1290	0.0060	0.1847	0.0049	0.3359
Trichloroethene (TCE)	0.0010	0.0000	0.0013	0.0196	0.0011	0.0202	0.0011	0.0397
Total Mass Removed		0.057		0.246		0.364		0.668

The sample results from the extraction wells indicate that the average PCE concentration being extracted from the system is 0.0049 mg/L. A total of 0.67 kg of VOC's were removed by the groundwater extraction system during the 2010 irrigation season.

During system operation, surface water samples were collected on a monthly basis from the golf course sprinkler system. These water quality samples ensure that treatment goals are met. In addition, a single sample was collected from the east golf course pond during the June sampling event. The field book notes, sampling forms and lab reports for each of these sampling events has been included as Attachment B to this report. An October sampling event was not completed since Golf Course personnel shut down the sprinkler within a week of the September sampling event. Hydrometrics' personnel winterized the extraction system after the system was shut down. The results from the monthly sampling events indicate that all VOCs were below their respective laboratory ultra low detection limits prior to land application with the exception of the July 30, 2010 sample, which had a chloroform concentration of 0.00053 mg/L, just above the 0.0005 mg/L detection limit.

If you have any questions concerning this data or need any additional information to complete your files, please do not hesitate to call me at 443-4150, Ext. 172.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jodi Bingham', is written over a circular stamp. The signature is fluid and cursive.

Jodi Bingham, P.E.
Environmental Engineer/Chemist

c: John Rundquist, City of Helena Public Works Director (w/attachments)
Ben Sautter, City of Helena Solid Waste Supervisor (w/attachments)
Mike Wignot, Hydrometrics, Inc. (w/out attachments)

ATTACHMENT A

**DATA ANALYSIS FOR THE
GROUNDWATER EXTRACTION SYSTEM**

HL-99-1

Operational Data:

Date	Time	Hour Meter Reading	Totalizer 1 Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Hours Operated		Volume Extracted		Flowrate	
						Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Calculated from Avg. Flow and Hour Meter Readings	Average Flowmeter Reading	Calculated from Totalizer and Hour meter
4/20/2010	14:00	0.0	101	0	10.02	0	0			10.02	0
4/23/2010	15:05				9.47						
5/13/2010	11:02	549.0	320,115	320,014	9.61						
	last period to date					549.0	549.0	320,014	314,248	9.54	9.7
5/26/2010	12:00	862.0	516,531	513,392	10.30	549.0	549.0	320,014	319,518	9.70	9.7
	last period to date					313.0	313.0	193,378	186,955	9.96	10.3
6/24/2010	12:05	1531.5	932,984	932,843	10.41	862.0	862.0	513,392	509,442	9.85	9.9
	last period to date					696.1	669.5	419,451	415,960	10.36	10.4
7/30/2010	15:25	2398.8	471,386	471,247	10.31	1558.1	1531.5	932,843	915,408	9.96	10.2
	last period to date					867.3	867.3	538,403	539,114	10.36	10.3
8/31/2010	13:15	3164.8	52,550	52,410	14.23	2425.4	2398.8	1,471,246	1,442,159	10.02	10.2
	last period to date					765.8	766.0	581,162	563,929	12.27	12.6
10/1/2010	8:10	3904.0	219,151	219,011	9.02	3191.3	3164.8	2,052,409	2,016,882	10.62	10.8
	last period to date					*flowmeter wouldn't cycle - could only read T1 - estimated others					
						738.9	739.2	166,602	515,592	11.63	3.8
10/6/2010	12:05	4027.5	247,362	247,222	3.8	3930.2	3904.0	2,219,010	2,441,074	10.42	9.5
	last period to date					*flowmeter wouldn't cycle - could only read T1 - estimated others					
						123.9	123.5	28,211	47,498	6.41	3.8
Average/Total for 2010 Operating Season						4054.1	4027.5	2,247,221	2,340,515	9.69	9.3

VOC Sample Data (mg/L):

VOC	Cleanup Level*	12/15/2009	6/14/2010	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.0005	No Sample Pump Failure	<0.001	<0.001	0.0043
Chloroethane	0.0005		<0.001	<0.001	0.0043
Chloroform	0.0005		0.0031	0.0031	0.0221
Cis-1,2-dichloroethane	0.0005		0.0020	0.0020	0.0128
Dichlorodifluoromethane	0.0005		<0.001	<0.001	0.0043
Tetrachloroethene	0.0005		0.0031	0.0031	0.0221
Trichloroethene	0.0005		<0.001	0.0010	0.0043
Trichlorofluoromethane	0.0005		<0.001	<0.001	0.0043
Total					0.0783

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:

mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
 (0.0031 mg/L PCE - 0.0005 mg/L)*2,247,221 gallons water *
 3.785 L/gal * 1/10⁶ kg/mg = 0.0221 kg PCE removed

Operational Data:

Date	Time	Hour Meter Reading	Totalizer 1 Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Hours Operated		Volume Extracted		Flowrate		
						Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Calculated from Flowmeter and Hour Meter Readings	Average Flowmeter Reading	Calculated from Totalizer and Hour meter	
4/20/2010	13:55	0.0	301	0	36.1	0	0			36.1	0	
4/23/2010	15:00				34.7							
5/13/2010	11:10	549.2	573,200	572,899	34.6	*flowmeter stuck - reset						
	last period to date					549.3	549.2	572,899	1,141,787	34.65	17.4	due to stuck flowmeter
						549.3	549.2	572,899	1,157,714	35.1	17.4	due to stuck flowmeter
5/26/2010	11:55	860.0	64,926	64,632	28.6	*had to turn pump down - pumping air						
	last period to date					312.8	310.8	491,732	589,277	31.6	26.4	due to stuck flowmeter
						862.0	860.0	1,064,631	1,728,600	33.50	20.6	due to stuck flowmeter
6/24/2010	12:10	1530.2	283,374	283,073	27.7	*flowmeter stuck - reset						
	last period to date					696.2	670.2	218,441	1,131,968	28.2	5.4	due to stuck flowmeter
						1558.3	1530.2	2,283,072	2,969,200	32.34	24.9	due to stuck flowmeter
7/30/2010	15:20	2397.4	597,625	597,327	23.9							
	last period to date					867.2	867.2	1,314,253	1,342,426	25.8	25.3	due to stuck flowmeter
						2425.4	2397.4	3,597,326	4,449,574	30.93	25.0	due to stuck flowmeter
8/31/2010	13:10	3163.4	597,651	597,350	25.8	*flowmeter stuck - average of previous						
	last period to date					765.8	766.0	1,000,022	1,142,106	24.9	21.8	due to stuck flowmeter
						3191.3	3163.4	4,597,349	5,732,081	30.20	24.2	due to stuck flowmeter
10/1/2010	7:50	3902.7	597,661	297,366	24.20	*flowmeter stuck - average of previous						
	last period to date					738.7	739.3	700,015	1,108,950	25.00	15.8	
						3929.9	3902.7	5,297,365	6,896,071	29.45	22.6	
10/6/2010	12:10	4026.3	597,671	597,383	21.0	*flowmeter stuck - surged then took readings						
	last period to date					863.0	862.9	1,000,032	1,211,512	23.4	19.3	due to stuck flowmeter
						4054.3	4026.3	6,597,382	6,887,657	28.51	27.3	due to stuck flowmeter
Average/Total for 2010 Operating Season						4054.3	4026.3	6,597,382	6,887,657	28.5	27.3	

VOC Sample Data (mg/L):

VOC	Cleanup Level	12/15/2009	6/14/2010	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.0005	0.0030	0.0015	0.0023	0.0456
Chloroethane	0.0005	<0.001	<0.001	<0.001	0.0130
Chloroform	0.0005	0.0017	0.0016	0.0017	0.0300
Cis-1,2-dichloroethane	0.0005	<0.001	<0.001	<0.001	0.0130
Dichlorodifluoromethane	0.0005	0.0015	0.0012	0.0014	0.0222
Tetrachloroethene	0.0005	0.0076	0.0033	0.0055	0.1290
Trichloroethene	0.0005	0.0015	<0.001	0.0013	0.0196
Trichlorofluoromethane	0.0005	<0.001	<0.001	<0.001	0.0130
Total					0.2855

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:

mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
 (0.0055 mg/L PCE - 0.0005 mg/L) * 6,887,657 gallons water *
 3.785 L/gal * 1/10*6 kg/mg = 0.129 kg PCE removed

Operational Data:

Date	Time	Hour Meter Reading	Totalizer 1 Reading	Totalizer 2 Reading	Instantaneous Flowmeter Reading	Hours Operated		Volume Extracted		Flowrate	
						Calculated from date	Calculated from hour meter	Calculated from Totalizer 2 Readings	Calculated from Flowmeter and Hour Meter Readings	Average Flowmeter Reading	Calculated from Totalizer and Hour meter
4/23/2010	14:55	0.0		0	36.6	0	0			36.6	0
5/13/2010	11:30	476.6	8,350	8,038	35.1						
	last period to date					476.6	476.6	1,008,037	1,025,167	35.85	35.3
5/26/2010	11:50	789.0	706,671	706,365	36.9			1,008,037	1,025,167	35.85	35.3
	last period to date					312.3	312.4	698,328	674,784	36.00	37.3
6/24/2010	12:15	1458.7	168,995	168,683	36.6			1,706,364	1,713,708	36.20	36.0
	last period to date			set at	40.50	788.9	789.0				
7/30/2010	15:15	2325.7	176,876	176,574	37.6						
	last period to date					867.0	867.0	2,007,890	1,929,942	37.10	38.6
8/31/2010	13:05	3091.7	421,028	420,715	37.1			5,176,573	5,193,288	37.22	37.1
	last period to date					2352.3	2325.7				
10/1/2010	7:40	3830.1	9,329	9,025	35.70						
	last period to date					765.8	766.0	1,244,140	1,716,606	37.35	27.1
10/6/2010	12:15	3954.5	274,365	274,062	40.50			6,420,714	6,900,674	37.20	34.6
	last period to date					3118.2	3091.7				
						738.6	738.4	1,588,309	1,612,666	36.40	35.9
						3856.7	3830.1	8,009,024	8,505,695	37.01	34.9
						124.6	124.4	265,037	284,378	38.10	35.5
						3981.3	3954.5	8,274,061	8,873,898	37.40	34.9
Average/Total for 2010 Operating Season						3981.3	3954.5	8,274,061	8,873,898	37.4	34.9

VOC Sample Data (mg/L):

VOC	Cleanup Level	12/15/2009	6/14/2010	Avg. Conc.	Total Mass (kg)
1,1-Dichloroethane	0.0005	0.0023	0.0029	0.0026	0.0705
Chloroethane	0.0005	<0.001	<0.001	<0.001	0.0168
Chloroform	0.0005	0.0020	0.0026	0.0023	0.0605
Cis-1,2-dichloroethane	0.0005	<0.001	<0.001	<0.001	0.0168
Dichlorodifluoromethane	0.0005	<0.001	0.0017	0.0014	0.0285
Tetrachloroethene	0.0005	0.0068	0.0052	0.0060	0.1847
Trichloroethene	0.0005	0.0011	0.0011	0.0011	0.0202
Trichlorofluoromethane	0.0005	<0.001	<0.001	<0.001	0.0168
Total					0.4148

*This cleanup level is the ultra-low detection limit used when analyzing the surface water samples collected at the golf course pond and sprinkler used for compliance monitoring.

Sample Calculation:

mass of PCE removed (kg) = (avg. PCE conc - cleanup conc) * volume
 = (0.0060 mg/L PCE - 0.0005 mg/L) * 8,873,898 gallons water *
 3.785 L/gal * 1/10⁶ kg/mg = 0.1847 kg PCE removed

ATTACHMENT B

**FIELD BOOK NOTES, SAMPLING FORMS AND
LAB REPORTS FOR SURFACE WATER SAMPLES**

<u>Site</u>	<u>Code#</u>	<u>Date</u>	<u>Time</u>	<u>Bottle</u>
Sprinkler	CHHL-	5/26/10	11:45	2/AF/HNO ₃ /VOC
	1005-			1/AF/Rar/VOC
	100			

Weather:

Calm, Overcast, 60°

GWES

<u>Site</u>	<u>Hr</u>	<u>Flow</u>	<u>Total</u>
HL-99-3	789.0	36.9	706671
			706365

HL-99-2	860.0	28.6	649255
			64631.8

HL-99-1	862.0	10.3	513531
			513392

HL-10-01	58.78		
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ANALYTICAL SUMMARY REPORT

June 04, 2010

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H10050340

Project Name: 1273 City of Helena

Energy Laboratories Inc received the following 1 sample for Hydrometrics Inc on 5/26/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10050340-001	CHHL-1005-100	05/26/10 11:45	05/26/10	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Login Supervisor

Digitally signed by

Wanda Johnson

Date: 2010.06.07 11:31:18 -06:00

JUN 10 2010



LABORATORY ANALYTICAL REPORT

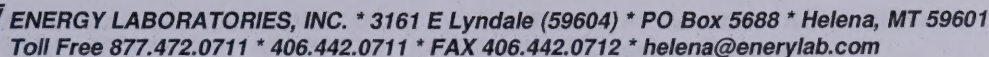
Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H10050340-001
Client Sample ID CHHL-1005-100

Report Date: 06/04/10
Collection Date: 05/26/10 11:45
Date Received: 05/26/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/01/10 14:17 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/01/10 14:17 / abb
Benzene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Bromoform	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Chloroform	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/01/10 14:17 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/01/10 14:17 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/01/10 14:17 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Styrene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Toluene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	06/01/10 14:17 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H10050340-001
Client Sample ID CHHL-1005-100

Report Date: 06/04/10
Collection Date: 05/26/10 11:45
DateReceived: 05/26/10
Matrix: Aqueous

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/04/10
Work Order: H10050340

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R62776
Sample ID: CCV060110A										06/01/10 11:24
54 Continuing Calibration Verification Standard										
Acetone		52.4	ug/L	20	105	70	130			
Acrylonitrile		50.8	ug/L	20	102	70	130			
Benzene		5.00	ug/L	1.0	100	70	130			
Bromochloromethane		5.16	ug/L	1.0	103	70	130			
Bromodichloromethane		5.20	ug/L	1.0	104	70	130			
Bromoform		5.72	ug/L	1.0	114	70	130			
Bromomethane		4.12	ug/L	1.0	82	70	130			
Carbon disulfide		4.40	ug/L	1.0	88	70	130			
Carbon tetrachloride		4.64	ug/L	1.0	93	70	130			
Chlorobenzene		4.96	ug/L	1.0	99	70	130			
Chlorodibromomethane		5.28	ug/L	1.0	106	70	130			
Chloroethane		4.04	ug/L	1.0	81	70	130			
Chloroform		4.96	ug/L	1.0	99	80	120			
Chloromethane		4.72	ug/L	1.0	94	70	130			
1,2-Dibromo-3-chloropropane		5.40	ug/L	1.0	108	70	130			
1,2-Dibromoethane		5.44	ug/L	1.0	109	70	130			
Dibromomethane		5.08	ug/L	1.0	102	70	130			
1,2-Dichlorobenzene		5.04	ug/L	1.0	101	70	130			
1,4-Dichlorobenzene		5.12	ug/L	1.0	102	70	130			
trans-1,4-Dichloro-2-butene		4.72	ug/L	1.0	94	70	130			
Dichlorodifluoromethane		4.60	ug/L	1.0	92	70	130			
1,1-Dichloroethane		5.28	ug/L	1.0	106	70	130			
1,2-Dichloroethane		4.76	ug/L	1.0	95	70	130			
1,1-Dichloroethene		4.68	ug/L	1.0	94	80	120			
cis-1,2-Dichloroethene		5.16	ug/L	1.0	103	70	130			
trans-1,2-Dichloroethene		5.04	ug/L	1.0	101	70	130			
1,2-Dichloropropane		5.20	ug/L	1.0	104	80	120			
cis-1,3-Dichloropropene		5.08	ug/L	1.0	102	70	130			
trans-1,3-Dichloropropene		5.12	ug/L	1.0	102	70	130			
Ethylbenzene		4.88	ug/L	1.0	98	80	120			
2-Hexanone		48.0	ug/L	20	96	70	130			
Iodomethane		4.56	ug/L	1.0	91	70	130			
Methyl ethyl ketone		58.0	ug/L	20	116	70	130			
Methyl isobutyl ketone		47.6	ug/L	20	95	70	130			
Methylene chloride		5.12	ug/L	1.0	102	70	130			
Styrene		4.96	ug/L	1.0	99	70	130			
1,1,1,2-Tetrachloroethane		4.88	ug/L	1.0	98	70	130			
1,1,2,2-Tetrachloroethane		5.20	ug/L	1.0	104	70	130			
Tetrachloroethene		4.56	ug/L	1.0	91	70	130			
Toluene		4.76	ug/L	1.0	95	80	120			
1,1,1-Trichloroethane		4.56	ug/L	1.0	91	70	130			
1,1,2-Trichloroethane		5.12	ug/L	1.0	102	70	130			
Trichloroethene		4.52	ug/L	1.0	90	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/04/10
Work Order: H10050340

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R62776
Sample ID: CCV060110A	54 Continuing Calibration Verification Standard									06/01/10 11:24
Trichlorofluoromethane		4.76	ug/L	1.0	95	70	130			
1,2,3-Trichloropropane		6.48	ug/L	1.0	130	70	130			
Vinyl acetate		5.20	ug/L	1.0	104	70	130			
Vinyl chloride		4.92	ug/L	1.0	98	80	120			
m+p-Xylenes		9.64	ug/L	1.0	96	70	130			
o-Xylene		4.84	ug/L	1.0	97	70	130			
Xylenes, Total		14.5	ug/L	1.0	97	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	103	70	130			
Surr: Dibromofluoromethane				1.0	105	70	130			
Surr: p-Bromofluorobenzene				1.0	99	70	130			
Surr: Toluene-d8				1.0	99	70	130			
Method: SW8260B										Batch: R62776
Sample ID: LCS060110A	54 Laboratory Control Sample									Run: 1SATURN_100601B
Acetone		64.8	ug/L	20	130	70	130			06/01/10 12:08
Acrylonitrile		52.0	ug/L	20	104	70	130			
Benzene		5.00	ug/L	1.0	100	70	130			
Bromochloromethane		5.28	ug/L	1.0	106	70	130			
Bromodichloromethane		4.96	ug/L	1.0	99	70	130			
Bromoform		5.72	ug/L	1.0	114	70	130			
Bromomethane		4.08	ug/L	1.0	82	70	130			
Carbon disulfide		4.64	ug/L	1.0	93	70	130			
Carbon tetrachloride		4.68	ug/L	1.0	94	70	130			
Chlorobenzene		4.88	ug/L	1.0	98	70	130			
Chlorodibromomethane		5.20	ug/L	1.0	104	70	130			
Chloroethane		4.28	ug/L	1.0	86	70	130			
Chloroform		5.12	ug/L	1.0	102	70	130			
Chloromethane		4.60	ug/L	1.0	92	70	130			
1,2-Dibromo-3-chloropropane		5.36	ug/L	1.0	107	70	130			
1,2-Dibromoethane		5.20	ug/L	1.0	104	70	130			
Dibromomethane		4.96	ug/L	1.0	99	70	130			
1,2-Dichlorobenzene		5.00	ug/L	1.0	100	70	130			
1,4-Dichlorobenzene		5.32	ug/L	1.0	106	70	130			
trans-1,4-Dichloro-2-butene		5.48	ug/L	1.0	110	70	130			
Dichlorodifluoromethane		4.48	ug/L	1.0	90	70	130			
1,1-Dichloroethane		5.20	ug/L	1.0	104	70	130			
1,2-Dichloroethane		4.84	ug/L	1.0	97	70	130			
1,1-Dichloroethene		4.48	ug/L	1.0	90	70	130			
cis-1,2-Dichloroethene		5.08	ug/L	1.0	102	70	130			
trans-1,2-Dichloroethene		5.00	ug/L	1.0	100	70	130			
1,2-Dichloropropane		5.16	ug/L	1.0	103	70	130			
cis-1,3-Dichloropropene		5.04	ug/L	1.0	101	70	130			
trans-1,3-Dichloropropene		5.08	ug/L	1.0	102	70	130			
Ethylbenzene		4.88	ug/L	1.0	98	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/04/10
Work Order: H10050340

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R62776
Sample ID: LCS060110A	54	Laboratory Control Sample			Run: 1SATURN_100601B			06/01/10 12:08		
2-Hexanone		51.2	ug/L	20	102	70	130			
Iodomethane		5.36	ug/L	1.0	107	70	130			
Methyl ethyl ketone		61.2	ug/L	20	122	70	130			
Methyl isobutyl ketone		46.8	ug/L	20	94	70	130			
Methylene chloride		5.48	ug/L	1.0	110	70	130			
Styrene		4.84	ug/L	1.0	97	70	130			
1,1,1,2-Tetrachloroethane		5.04	ug/L	1.0	101	70	130			
1,1,2,2-Tetrachloroethane		5.36	ug/L	1.0	107	70	130			
Tetrachloroethene		4.40	ug/L	1.0	88	70	130			
Toluene		4.56	ug/L	1.0	91	70	130			
1,1,1-Trichloroethane		4.68	ug/L	1.0	94	70	130			
1,1,2-Trichloroethane		5.08	ug/L	1.0	102	70	130			
Trichloroethene		4.64	ug/L	1.0	93	70	130			
Trichlorofluoromethane		4.60	ug/L	1.0	92	70	130			
1,2,3-Trichloropropane		6.00	ug/L	1.0	120	70	130			
Vinyl acetate		6.40	ug/L	1.0	128	70	130			
Vinyl chloride		4.76	ug/L	1.0	95	70	130			
m+p-Xylenes		9.44	ug/L	1.0	94	70	130			
o-Xylene		4.96	ug/L	1.0	99	70	130			
Xylenes, Total		14.4	ug/L	1.0	96	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	104	70	130			
Surr: Dibromofluoromethane				1.0	101	70	130			
Surr: p-Bromofluorobenzene				1.0	99	70	130			
Surr: Toluene-d8				1.0	94	70	130			
Sample ID: MB060110A	54	Method Blank			Run: 1SATURN_100601B			06/01/10 13:17		
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/04/10
Work Order: H10050340

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R62776
Sample ID: MB060110A	54	Method Blank		Run: 1SATURN_100601B				06/01/10 13:17		
1,4-Dichlorobenzene		ND	ug/L	0.50						
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				1.0	114	70	130			
Surr: Dibromofluoromethane				1.0	114	70	130			
Surr: p-Bromofluorobenzene				1.0	98	70	130			
Surr: Toluene-d8				1.0	102	70	130			
Sample ID: H10050340-001AMS	54	Sample Matrix Spike		Run: 1SATURN_100601B				06/01/10 20:52		
Acetone		124	ug/L	40	124	70	130			
Acrylonitrile		110	ug/L	40	110	70	130			
Benzene		11.5	ug/L	2.0	115	70	130			
Bromochloromethane		10.9	ug/L	2.0	109	70	130			
Bromodichloromethane		10.1	ug/L	2.0	101	70	130			
Bromoform		10.7	ug/L	2.0	107	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/04/10
Work Order: H10050340

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R62776
Sample ID: H10050340-001AMS										06/01/10 20:52
54 Sample Matrix Spike										Run: 1SATURN_100601B
Bromomethane		8.32	ug/L	2.0	83	70	130			
Carbon disulfide		9.28	ug/L	2.0	93	70	130			
Carbon tetrachloride		10.6	ug/L	2.0	106	70	130			
Chlorobenzene		10.1	ug/L	2.0	101	70	130			
Chlorodibromomethane		10.2	ug/L	2.0	102	70	130			
Chloroethane		9.12	ug/L	2.0	91	70	130			
Chloroform		10.6	ug/L	2.0	106	70	130			
Chloromethane		8.88	ug/L	2.0	89	70	130			
1,2-Dibromo-3-chloropropane		10.8	ug/L	2.0	108	70	130			
1,2-Dibromoethane		10.4	ug/L	2.0	104	70	130			
Dibromomethane		9.92	ug/L	2.0	99	70	130			
1,2-Dichlorobenzene		10.2	ug/L	2.0	102	70	130			
1,4-Dichlorobenzene		9.44	ug/L	2.0	94	70	130			
trans-1,4-Dichloro-2-butene		9.20	ug/L	2.0	92	70	130			
Dichlorodifluoromethane		7.94	ug/L	2.0	79	70	130			
1,1-Dichloroethane		11.7	ug/L	2.0	117	70	130			
1,2-Dichloroethane		11.5	ug/L	2.0	115	70	130			
1,1-Dichloroethene		9.60	ug/L	2.0	96	70	130			
cis-1,2-Dichloroethene		10.7	ug/L	2.0	107	70	130			
trans-1,2-Dichloroethene		10.4	ug/L	2.0	104	70	130			
1,2-Dichloropropane		10.2	ug/L	2.0	102	70	130			
cis-1,3-Dichloropropene		10.1	ug/L	2.0	101	70	130			
trans-1,3-Dichloropropene		10.1	ug/L	2.0	101	70	130			
Ethylbenzene		9.92	ug/L	2.0	99	70	130			
2-Hexanone		106	ug/L	40	106	70	130			
Iodomethane		10.5	ug/L	2.0	105	70	130			
Methyl ethyl ketone		108	ug/L	40	108	70	130			
Methyl isobutyl ketone		101	ug/L	40	101	70	130			
Methylene chloride		11.5	ug/L	2.0	115	70	130			
Styrene		9.84	ug/L	2.0	98	70	130			
1,1,1,2-Tetrachloroethane		9.92	ug/L	2.0	99	70	130			
1,1,2,2-Tetrachloroethane		10.2	ug/L	2.0	102	70	130			
Tetrachloroethene		9.28	ug/L	2.0	93	70	130			
Toluene		10.0	ug/L	2.0	100	70	130			
1,1,1-Trichloroethane		10.0	ug/L	2.0	100	70	130			
1,1,2-Trichloroethane		10.9	ug/L	2.0	109	70	130			
Trichloroethene		9.36	ug/L	2.0	94	70	130			
Trichlorofluoromethane		9.60	ug/L	2.0	96	70	130			
1,2,3-Trichloropropane		11.1	ug/L	2.0	111	70	130			
Vinyl acetate		12.5	ug/L	2.0	125	70	130			
Vinyl chloride		9.44	ug/L	2.0	94	70	130			
m+p-Xylenes		19.8	ug/L	2.0	99	70	130			
o-Xylene		10.1	ug/L	2.0	101	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/04/10
Work Order: H10050340

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R62776
Sample ID: H10050340-001AMS 54 Sample Matrix Spike										Run: 1SATURN_100601B 06/01/10 20:52
Xylenes, Total		29.9	ug/L	2.0	100	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	128	70	130			
Surr: Dibromofluoromethane				2.0	111	70	130			
Surr: p-Bromofluorobenzene				2.0	101	70	130			
Surr: Toluene-d8				2.0	100	70	130			
Sample ID: H10050340-001AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_100601B 06/01/10 21:22
Acetone		124	ug/L	40	124	70	130	0	20	
Acrylonitrile		109	ug/L	40	109	70	130	0.7	20	
Benzene		11.4	ug/L	2.0	114	70	130	0.7	20	
Bromochloromethane		10.6	ug/L	2.0	106	70	130	2.2	20	
Bromodichloromethane		9.84	ug/L	2.0	98	70	130	2.4	20	
Bromoform		8.32	ug/L	2.0	83	70	130	25	20	R
Bromomethane		8.08	ug/L	2.0	81	70	130	2.9	20	
Carbon disulfide		9.36	ug/L	2.0	94	70	130	0.9	20	
Carbon tetrachloride		10.2	ug/L	2.0	102	70	130	3.8	20	
Chlorobenzene		9.92	ug/L	2.0	99	70	130	1.6	20	
Chlorodibromomethane		10.4	ug/L	2.0	104	70	130	1.6	20	
Chloroethane		8.48	ug/L	2.0	85	70	130	7.3	20	
Chloroform		10.5	ug/L	2.0	105	70	130	0.8	20	
Chloromethane		8.88	ug/L	2.0	89	70	130	0	20	
1,2-Dibromo-3-chloropropane		10.9	ug/L	2.0	109	70	130	0.7	20	
1,2-Dibromoethane		10.7	ug/L	2.0	107	70	130	3	20	
Dibromomethane		10.0	ug/L	2.0	100	70	130	0.8	20	
1,2-Dichlorobenzene		9.76	ug/L	2.0	98	70	130	4.8	20	
1,4-Dichlorobenzene		9.52	ug/L	2.0	95	70	130	0.8	20	
trans-1,4-Dichloro-2-butene		9.20	ug/L	2.0	92	70	130	0	20	
Dichlorodifluoromethane		8.00	ug/L	2.0	80	70	130	0.8	20	
1,1-Dichloroethane		10.9	ug/L	2.0	109	70	130	7.1	20	
1,2-Dichloroethane		11.4	ug/L	2.0	114	70	130	1.4	20	
1,1-Dichloroethene		9.44	ug/L	2.0	94	70	130	1.7	20	
cis-1,2-Dichloroethene		10.6	ug/L	2.0	106	70	130	1.5	20	
trans-1,2-Dichloroethene		10.2	ug/L	2.0	102	70	130	1.6	20	
1,2-Dichloropropane		10.1	ug/L	2.0	101	70	130	0.8	20	
cis-1,3-Dichloropropene		9.44	ug/L	2.0	94	70	130	6.6	20	
trans-1,3-Dichloropropene		10.2	ug/L	2.0	102	70	130	0.8	20	
Ethylbenzene		10.0	ug/L	2.0	100	70	130	0.8	20	
2-Hexanone		109	ug/L	40	109	70	130	2.2	20	
Iodomethane		10.4	ug/L	2.0	104	70	130	0.8	20	
Methyl ethyl ketone		110	ug/L	40	110	70	130	1.5	20	
Methyl isobutyl ketone		100	ug/L	40	100	70	130	0.8	20	
Methylene chloride		11.6	ug/L	2.0	116	70	130	0.7	20	
Styrene		9.92	ug/L	2.0	99	70	130	0.8	20	
1,1,1,2-Tetrachloroethane		9.92	ug/L	2.0	99	70	130	0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.



QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 06/04/10
Work Order: H10050340

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R62776
Sample ID: H10050340-001AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_100601B 06/01/10 21:22
1,1,2,2-Tetrachloroethane		10.1	ug/L	2.0	101	70	130	0.8		20
Tetrachloroethene		9.36	ug/L	2.0	94	70	130	0.9		20
Toluene		9.36	ug/L	2.0	94	70	130	6.6		20
1,1,1-Trichloroethane		10.0	ug/L	2.0	100	70	130	0		20
1,1,2-Trichloroethane		10.3	ug/L	2.0	103	70	130	5.3		20
Trichloroethene		9.20	ug/L	2.0	92	70	130	1.7		20
Trichlorofluoromethane		9.20	ug/L	2.0	92	70	130	4.3		20
1,2,3-Trichloropropane		11.8	ug/L	2.0	118	70	130	6.3		20
Vinyl acetate		12.5	ug/L	2.0	125	70	130	0		20
Vinyl chloride		9.36	ug/L	2.0	94	70	130	0.9		20
m+p-Xylenes		22.2	ug/L	2.0	111	70	130	11		20
o-Xylene		9.76	ug/L	2.0	98	70	130	3.2		20
Xylenes, Total		31.9	ug/L	2.0	106	70	130	6.5		20
Surr: 1,2-Dichloroethane-d4				2.0	120	70	130	0		20
Surr: Dibromofluoromethane				2.0	118	70	130	0		20
Surr: p-Bromofluorobenzene				2.0	97	70	130	0		20
Surr: Toluene-d8				2.0	97	70	130	0		20

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



Hydrometrics Inc

H10050340

Login completed by: Wanda Johnson

Date Received: 5/26/2010

Reviewed by: BL2000\lforash

Received by: wjj

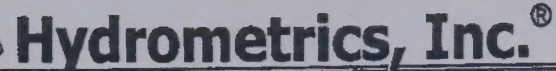
Reviewed Date: 5/28/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature:	1.6°C On Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

2 pres w/ HCL - 1 not pres. TI



2727 Airport Road • Helena, Montana 59601 • (406) 443-4150

[illegible]

Return results & electronic copy to:
Computer Dept. at address at top of page

Site	Code#	Date	Time	Notes
Sprinkler	CHHL-1006-100	6-24-10	11:30	2/UF/HNO ₃ /VOC 1/UF/Reo/VOC

Pond	CHHL-1006-101	6-24-10	11:20	2/UF/HNO ₃ /VOC 1/UF/Reo/VOC
------	---------------	---------	-------	--

Weather:

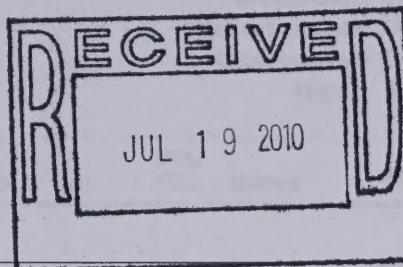
Light Wind, overcast, 65°

GWES:

Site	Hr	Flow	Total 1	Total 2
12:00 HL-99-1	1531.5	10.41	932984	932843
12:10 HL-99-2	1530.2	27.7	283374	283073
flow meter off when got there - raked				
12:15 HL-99-3	1458.7	30.6	148995	148683
set at 40.5 gpm				

ANALYTICAL SUMMARY REPORT

July 13, 2010

 Hydrometrics Inc
 3020 Bozeman Ave
 Helena, MT 59601


Workorder No.: H10060389

Project Name: 1273.600 City of Helena Landfill GWES

Energy Laboratories Inc received the following 2 samples for Hydrometrics Inc on 6/24/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10060389-001	CHHL-1006-100	06/24/10 11:30	06/24/10	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I
H10060389-002	CHHL-1006-101	06/24/10 11:20	06/24/10	Aqueous	Same As Above

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Login Supervisor

 Digitally signed by
 Wanda Johnson

Date: 2010.07.13 15:24:53 -06:00

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc
Project: 1273.600 City of Helena Landfill GWES
Lab ID: H10060389-001
Client Sample ID CHHL-1006-100

Report Date: 07/13/10
Collection Date: 06/24/10 11:30
Date Received: 06/24/10
Matrix: Aqueous

Sprinkler

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/30/10 12:56 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/30/10 12:56 / abb
Benzene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Bromoform	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Chloroform	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/30/10 12:56 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/30/10 12:56 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/30/10 12:56 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Styrene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Toluene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/30/10 12:56 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Report Date: 07/13/10
Collection Date: 06/24/10 11:30
DateReceived: 06/24/10
Matrix: Aqueous

[illegible]

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc
Project: 1273.600 City of Helena Landfill GWES
Lab ID: H10060389-002
Client Sample ID: CHHL-1006-101

Report Date: 07/13/10
Collection Date: 06/24/10 11:20
Date Received: 06/24/10
Matrix: Aqueous

Pond

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	06/30/10 13:26 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	06/30/10 13:26 / abb
Benzene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Bromoform	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Chloroform	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
2-Hexanone	ND	ug/L		20		SW8260B	06/30/10 13:26 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/30/10 13:26 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	06/30/10 13:26 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Styrene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Tetrachloroethene	0.38	ug/L	J	0.50		SW8260B	06/30/10 13:26 / abb
Toluene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	06/30/10 13:26 / abb

Report Definitions: RL - Analyte reporting limit. MCL - Maximum contaminant level.
QCL - Quality control limit. ND - Not detected at the reporting limit.
J - Estimated value. The analyte was present but less than the reporting limit.

Report Date: 07/13/10
Collection Date: 06/24/10 11:20
DateReceived: 06/24/10
Matrix: Aqueous

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273.600 City of Helena Landfill GWES

Report Date: 07/13/10
Work Order: H10060389

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: R63418		
Sample ID: CCV063010A		54 Continuing Calibration Verification Standard						06/30/10 09:59		
Acetone		55.2	ug/L	20	110	70	130			
Acrylonitrile		49.2	ug/L	20	98	70	130			
Benzene		5.20	ug/L	1.0	104	70	130			
Bromochloromethane		5.24	ug/L	1.0	105	70	130			
Bromodichloromethane		5.12	ug/L	1.0	102	70	130			
Bromoform		5.20	ug/L	1.0	104	70	130			
Bromomethane		4.40	ug/L	1.0	88	70	130			
Carbon disulfide		4.72	ug/L	1.0	94	70	130			
Carbon tetrachloride		5.48	ug/L	1.0	110	70	130			
Chlorobenzene		4.84	ug/L	1.0	97	70	130			
Chlorodibromomethane		5.04	ug/L	1.0	101	70	130			
Chloroethane		4.24	ug/L	1.0	85	70	130			
Chloroform		5.24	ug/L	1.0	105	80	120			
Chloromethane		4.76	ug/L	1.0	95	70	130			
1,2-Dibromo-3-chloropropane		5.04	ug/L	1.0	101	70	130			
1,2-Dibromoethane		5.12	ug/L	1.0	102	70	130			
Dibromomethane		4.88	ug/L	1.0	98	70	130			
1,2-Dichlorobenzene		5.16	ug/L	1.0	103	70	130			
1,4-Dichlorobenzene		5.16	ug/L	1.0	103	70	130			
trans-1,4-Dichloro-2-butene		4.76	ug/L	1.0	95	70	130			
Dichlorodifluoromethane		4.96	ug/L	1.0	99	70	130			
1,1-Dichloroethane		5.80	ug/L	1.0	116	70	130			
1,2-Dichloroethane		5.76	ug/L	1.0	115	70	130			
1,1-Dichloroethene		5.52	ug/L	1.0	110	80	120			
cis-1,2-Dichloroethene		5.40	ug/L	1.0	108	70	130			
trans-1,2-Dichloroethene		5.40	ug/L	1.0	108	70	130			
1,2-Dichloropropane		5.20	ug/L	1.0	104	80	120			
cis-1,3-Dichloropropene		5.04	ug/L	1.0	101	70	130			
trans-1,3-Dichloropropene		4.80	ug/L	1.0	96	70	130			
Ethylbenzene		4.96	ug/L	1.0	99	80	120			
2-Hexanone		46.4	ug/L	20	93	70	130			
Iodomethane		5.00	ug/L	1.0	100	70	130			
Methyl ethyl ketone		59.2	ug/L	20	118	70	130			
Methyl isobutyl ketone		46.4	ug/L	20	93	70	130			
Methylene chloride		4.88	ug/L	1.0	98	70	130			
Styrene		5.04	ug/L	1.0	101	70	130			
1,1,1,2-Tetrachloroethane		4.84	ug/L	1.0	97	70	130			
1,1,2,2-Tetrachloroethane		5.04	ug/L	1.0	101	70	130			
Tetrachloroethene		5.00	ug/L	1.0	100	70	130			
Toluene		4.72	ug/L	1.0	94	80	120			
1,1,1-Trichloroethane		5.28	ug/L	1.0	106	70	130			
1,1,2-Trichloroethane		5.20	ug/L	1.0	104	70	130			
Trichloroethene		5.04	ug/L	1.0	101	70	130			
Trichlorofluoromethane		5.16	ug/L	1.0	103	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc

Report Date: 07/13/10

Project: 1273.600 City of Helena Landfill GWES

Work Order: H10060389

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: R63418		
Sample ID: CCV063010A								54 Continuing Calibration Verification Standard		
								06/30/10 09:59		
1,2,3-Trichloropropane		6.12	ug/L	1.0	122	70	130			
Vinyl acetate		5.16	ug/L	1.0	103	70	130			
Vinyl chloride		5.00	ug/L	1.0	100	80	120			
m+p-Xylenes		9.80	ug/L	1.0	98	70	130			
o-Xylene		5.08	ug/L	1.0	102	70	130			
Xylenes, Total		14.9	ug/L	1.0	99	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	127	70	130			
Surr: Dibromofluoromethane				1.0	106	70	130			
Surr: p-Bromofluorobenzene				1.0	101	70	130			
Surr: Toluene-d8				1.0	102	70	130			

Method: SW8260B								Batch: R63418		
Sample ID: LCS063010A								54 Laboratory Control Sample		
								Run: 1SATURN_100630A		
								06/30/10 10:39		
Acetone		64.8	ug/L	20	130	70	130			
Acrylonitrile		53.2	ug/L	20	106	70	130			
Benzene		5.04	ug/L	1.0	101	70	130			
Bromochloromethane		4.96	ug/L	1.0	99	70	130			
Bromodichloromethane		4.72	ug/L	1.0	94	70	130			
Bromoform		5.28	ug/L	1.0	106	70	130			
Bromomethane		4.80	ug/L	1.0	96	70	130			
Carbon disulfide		5.04	ug/L	1.0	101	70	130			
Carbon tetrachloride		5.08	ug/L	1.0	102	70	130			
Chlorobenzene		4.68	ug/L	1.0	94	70	130			
Chlorodibromomethane		4.96	ug/L	1.0	99	70	130			
Chloroethane		4.20	ug/L	1.0	84	70	130			
Chloroform		5.20	ug/L	1.0	104	70	130			
Chloromethane		4.76	ug/L	1.0	95	70	130			
1,2-Dibromo-3-chloropropane		5.24	ug/L	1.0	105	70	130			
1,2-Dibromoethane		5.12	ug/L	1.0	102	70	130			
Dibromomethane		5.12	ug/L	1.0	102	70	130			
1,2-Dichlorobenzene		4.84	ug/L	1.0	97	70	130			
1,4-Dichlorobenzene		5.48	ug/L	1.0	110	70	130			
trans-1,4-Dichloro-2-butene		4.32	ug/L	1.0	86	70	130			
Dichlorodifluoromethane		5.04	ug/L	1.0	101	70	130			
1,1-Dichloroethane		5.16	ug/L	1.0	103	70	130			
1,2-Dichloroethane		5.52	ug/L	1.0	110	70	130			
1,1-Dichloroethene		4.72	ug/L	1.0	94	70	130			
cis-1,2-Dichloroethene		5.04	ug/L	1.0	101	70	130			
trans-1,2-Dichloroethene		5.16	ug/L	1.0	103	70	130			
1,2-Dichloropropane		4.96	ug/L	1.0	99	70	130			
cis-1,3-Dichloropropene		4.76	ug/L	1.0	95	70	130			
trans-1,3-Dichloropropene		4.60	ug/L	1.0	92	70	130			
Ethylbenzene		4.76	ug/L	1.0	95	70	130			
2-Hexanone		49.6	ug/L	20	99	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc

Report Date: 07/13/10

Project: 1273.600 City of Helena Landfill GWES

Work Order: H10060389

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B									Batch: R63418	
Sample ID: LCS063010A	54 Laboratory Control Sample					Run: 1SATURN_100630A			06/30/10 10:39	
Iodomethane		5.60	ug/L	1.0	112	70	130			
Methyl ethyl ketone		61.2	ug/L	20	122	70	130			
Methyl isobutyl ketone		47.2	ug/L	20	94	70	130			
Methylene chloride		5.00	ug/L	1.0	100	70	130			
Styrene		4.80	ug/L	1.0	96	70	130			
1,1,1,2-Tetrachloroethane		5.04	ug/L	1.0	101	70	130			
1,1,2,2-Tetrachloroethane		4.96	ug/L	1.0	99	70	130			
Tetrachloroethene		4.48	ug/L	1.0	90	70	130			
Toluene		4.44	ug/L	1.0	89	70	130			
1,1,1-Trichloroethane		5.04	ug/L	1.0	101	70	130			
1,1,2-Trichloroethane		5.04	ug/L	1.0	101	70	130			
Trichloroethene		4.68	ug/L	1.0	94	70	130			
Trichlorofluoromethane		5.20	ug/L	1.0	104	70	130			
1,2,3-Trichloropropane		5.52	ug/L	1.0	110	70	130			
Vinyl acetate		5.88	ug/L	1.0	118	70	130			
Vinyl chloride		5.36	ug/L	1.0	107	70	130			
m+p-Xylenes		9.80	ug/L	1.0	98	70	130			
o-Xylene		4.96	ug/L	1.0	99	70	130			
Xylenes, Total		14.8	ug/L	1.0	98	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	108	70	130			
Surr: Dibromofluoromethane				1.0	110	70	130			
Surr: p-Bromofluorobenzene				1.0	100	70	130			
Surr: Toluene-d8				1.0	95	70	130			
Sample ID: MB063010A	54 Method Blank					Run: 1SATURN_100630A			06/30/10 11:55	
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						
1,4-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc

Report Date: 07/13/10

Project: 1273.600 City of Helena Landfill GWES

Work Order: H10060389

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R63418
Sample ID: MB063010A	54	Method Blank				Run: 1SATURN_100630A				06/30/10 11:55
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	113	70	130			
Surr: Dibromofluoromethane				1.0	119	70	130			
Surr: p-Bromofluorobenzene				1.0	103	70	130			
Surr: Toluene-d8				1.0	98	70	130			
Sample ID: H10060406-001AMS	54	Sample Matrix Spike				Run: 1SATURN_100630A				06/30/10 20:26
Acetone		110	ug/L	40	110	70	130			
Acrylonitrile		105	ug/L	40	105	70	130			
Benzene		11.4	ug/L	2.0	114	70	130			
Bromochloromethane		10.3	ug/L	2.0	103	70	130			
Bromodichloromethane		9.20	ug/L	2.0	92	70	130			
Bromoform		10.7	ug/L	2.0	107	70	130			
Bromomethane		8.96	ug/L	2.0	90	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc

Project: 1273.600 City of Helena Landfill GWES

Report Date: 07/13/10

Work Order: H10060389

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R63418
Sample ID: H10060406-001AMS 54 Sample Matrix Spike										Run: 1SATURN_100630A 06/30/10 20:26
Carbon disulfide		9.60	ug/L	2.0	96	70	130			
Carbon tetrachloride		10.1	ug/L	2.0	101	70	130			
Chlorobenzene		9.60	ug/L	2.0	96	70	130			
Chlorodibromomethane		9.44	ug/L	2.0	94	70	130			
Chloroethane		9.92	ug/L	2.0	99	70	130			
Chloroform		11.9	ug/L	2.0	98	70	130			
Chloromethane		9.52	ug/L	2.0	95	70	130			
1,2-Dibromo-3-chloropropane		10.0	ug/L	2.0	100	70	130			
1,2-Dibromoethane		9.84	ug/L	2.0	98	70	130			
Dibromomethane		9.20	ug/L	2.0	92	70	130			
1,2-Dichlorobenzene		10.6	ug/L	2.0	106	70	130			
1,4-Dichlorobenzene		10.5	ug/L	2.0	105	70	130			
trans-1,4-Dichloro-2-butene		10.0	ug/L	2.0	100	70	130			
Dichlorodifluoromethane		11.6	ug/L	2.0	100	70	130			
1,1-Dichloroethane		12.5	ug/L	2.0	99	70	130			
1,2-Dichloroethane		11.2	ug/L	2.0	112	70	130			
1,1-Dichloroethene		9.60	ug/L	2.0	96	70	130			
cis-1,2-Dichloroethene		11.7	ug/L	2.0	103	70	130			
trans-1,2-Dichloroethene		9.76	ug/L	2.0	98	70	130			
1,2-Dichloropropane		10.0	ug/L	2.0	100	70	130			
cis-1,3-Dichloropropene		8.64	ug/L	2.0	86	70	130			
trans-1,3-Dichloropropene		9.04	ug/L	2.0	90	70	130			
Ethylbenzene		9.84	ug/L	2.0	98	70	130			
2-Hexanone		91.2	ug/L	40	91	70	130			
Iodomethane		10.4	ug/L	2.0	104	70	130			
Methyl ethyl ketone		118	ug/L	40	118	70	130			
Methyl isobutyl ketone		89.6	ug/L	40	90	70	130			
Methylene chloride		10.4	ug/L	2.0	104	70	130			
Styrene		9.36	ug/L	2.0	94	70	130			
1,1,1,2-Tetrachloroethane		9.76	ug/L	2.0	98	70	130			
1,1,1,2-Tetrachloroethane		10.7	ug/L	2.0	107	70	130			
Tetrachloroethene		14.6	ug/L	2.0	89	70	130			
Toluene		9.04	ug/L	2.0	90	70	130			
1,1,1-Trichloroethane		10.7	ug/L	2.0	103	70	130			
1,1,2-Trichloroethane		10.1	ug/L	2.0	101	70	130			
Trichloroethene		10.4	ug/L	2.0	91	70	130			
Trichlorofluoromethane		11.0	ug/L	2.0	106	70	130			
1,2,3-Trichloropropane		12.0	ug/L	2.0	120	70	130			
Vinyl acetate		11.9	ug/L	2.0	119	70	130			
Vinyl chloride		10.6	ug/L	2.0	106	70	130			
m+p-Xylenes		19.6	ug/L	2.0	98	70	130			
o-Xylene		9.60	ug/L	2.0	96	70	130			
Xylenes, Total		29.2	ug/L	2.0	97	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	107	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc

Report Date: 07/13/10

Project: 1273.600 City of Helena Landfill GWES

Work Order: H10060389

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R63418
Sample ID: H10060406-001AMS	54	Sample Matrix Spike		Run: 1SATURN_100630A				06/30/10 20:26		
Surr: Dibromofluoromethane				2.0	105	70	130			
Surr: p-Bromofluorobenzene				2.0	107	70	130			
Surr: Toluene-d8				2.0	93	70	130			
Sample ID: H10060406-001AMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_100630A				06/30/10 20:56		
Acetone	114	ug/L	40	114	70	130	2.9	20		
Acrylonitrile	110	ug/L	40	110	70	130	5.2	20		
Benzene	12.6	ug/L	2.0	126	70	130	11	20		
Bromochloromethane	11.4	ug/L	2.0	114	70	130	9.6	20		
Bromodichloromethane	10.7	ug/L	2.0	107	70	130	15	20		
Bromoform	10.5	ug/L	2.0	105	70	130	2.3	20		
Bromomethane	10.1	ug/L	2.0	101	70	130	12	20		
Carbon disulfide	10.1	ug/L	2.0	101	70	130	4.9	20		
Carbon tetrachloride	11.1	ug/L	2.0	111	70	130	9.8	20		
Chlorobenzene	10.2	ug/L	2.0	102	70	130	5.7	20		
Chlorodibromomethane	10.2	ug/L	2.0	102	70	130	8.1	20		
Chloroethane	8.96	ug/L	2.0	90	70	130	10	20		
Chloroform	13.3	ug/L	2.0	112	70	130	11	20		
Chloromethane	9.92	ug/L	2.0	99	70	130	4.1	20		
1,2-Dibromo-3-chloropropane	10.6	ug/L	2.0	106	70	130	5.4	20		
1,2-Dibromoethane	10.6	ug/L	2.0	106	70	130	7.1	20		
Dibromomethane	10.3	ug/L	2.0	103	70	130	11	20		
1,2-Dichlorobenzene	10.4	ug/L	2.0	104	70	130	1.5	20		
1,4-Dichlorobenzene	10.4	ug/L	2.0	104	70	130	0.8	20		
trans-1,4-Dichloro-2-butene	9.12	ug/L	2.0	91	70	130	9.2	20		
Dichlorodifluoromethane	11.2	ug/L	2.0	96	70	130	3.5	20		
1,1-Dichloroethane	13.6	ug/L	2.0	110	70	130	8.6	20		
1,2-Dichloroethane	11.8	ug/L	2.0	118	70	130	4.9	20		
1,1-Dichloroethene	10.7	ug/L	2.0	107	70	130	11	20		
cis-1,2-Dichloroethene	13.0	ug/L	2.0	116	70	130	10	20		
trans-1,2-Dichloroethene	11.2	ug/L	2.0	112	70	130	14	20		
1,2-Dichloropropane	11.0	ug/L	2.0	110	70	130	9.2	20		
cis-1,3-Dichloropropene	10.0	ug/L	2.0	100	70	130	15	20		
trans-1,3-Dichloropropene	10.6	ug/L	2.0	106	70	130	16	20		
Ethylbenzene	10.6	ug/L	2.0	106	70	130	7.8	20		
2-Hexanone	98.4	ug/L	40	98	70	130	7.6	20		
Iodomethane	11.2	ug/L	2.0	112	70	130	7.4	20		
Methyl ethyl ketone	124	ug/L	40	124	70	130	4.6	20		
Methyl isobutyl ketone	96.0	ug/L	40	96	70	130	6.9	20		
Methylene chloride	11.8	ug/L	2.0	118	70	130	13	20		
Styrene	10.1	ug/L	2.0	101	70	130	7.4	20		
1,1,1,2-Tetrachloroethane	10.5	ug/L	2.0	105	70	130	7.1	20		
1,1,2,2-Tetrachloroethane	9.76	ug/L	2.0	98	70	130	9.4	20		
Tetrachloroethene	15.0	ug/L	2.0	93	70	130	2.7	20		

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273.600 City of Helena Landfill GWES

Report Date: 07/13/10
Work Order: H10060389

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R63418
Sample ID: H10060406-001AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_100630A 06/30/10 20:56
Toluene		10.1	ug/L	2.0	101	70	130	11	20	
1,1,1-Trichloroethane		11.5	ug/L	2.0	111	70	130	7.2	20	
1,1,2-Trichloroethane		10.9	ug/L	2.0	109	70	130	7.6	20	
Trichloroethene		11.4	ug/L	2.0	102	70	130	9.5	20	
Trichlorofluoromethane		10.6	ug/L	2.0	102	70	130	3	20	
1,2,3-Trichloropropane		9.68	ug/L	2.0	97	70	130	21	20	R
Vinyl acetate		11.0	ug/L	2.0	110	70	130	7.7	20	
Vinyl chloride		9.52	ug/L	2.0	95	70	130	10	20	
m+p-Xylenes		20.7	ug/L	2.0	104	70	130	5.6	20	
o-Xylene		10.6	ug/L	2.0	106	70	130	9.5	20	
Xylenes, Total		31.3	ug/L	2.0	104	70	130	6.9	20	
Surr: 1,2-Dichloroethane-d4				2.0	126	70	130	0	20	
Surr: Dibromofluoromethane				2.0	114	70	130	0	20	
Surr: p-Bromofluorobenzene				2.0	101	70	130	0	20	
Surr: Toluene-d8				2.0	100	70	130	0	20	

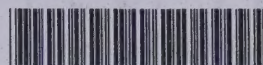
Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.

Workorder Receipt Checklist



H10060389

Hydrometrics Inc

Login completed by: Amanda B. Blackburn

Date Received: 6/24/2010

Reviewed by: BL2000\kwiegand

Received by: wjj

Reviewed Date: 7/1/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature:	16.4°C From Field		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

None

 Hydrometrics, Inc.[®]
2727 Airport Road • Helena, Montana 59601 • (406) 443-4150

2727 Airport Road • Helena, Montana 59601 • (406) 443-4150

[illegible]

Site	Code#	Date	Time	Bottles
Sprinkler	CHHL- 1007- 100	7-30-10	1505	2/OF/ 100 100 7/OF/Raw/100

Weather:

Sunny, calm, 90°F

GWES:

Site	Time	Hr	Flow	Total 1	Total 2
HL-99-3	1515	2325.7	37.6	176873	176574
HL-99-2	1520	2397.4	23.9	597625	597327
HL-99-3	1525	2398.5	10.31	471386	471247
- Full open @ 12.62					

ANALYTICAL SUMMARY REPORT

August 25, 2010

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H10070502

Project Name: 1273 City of Helena

Energy Laboratories Inc received the following 1 sample for Hydrometrics Inc on 7/30/2010 for analysis.

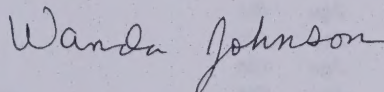
Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10070502-001	CHHL-1007-100	07/30/10 15:05	07/30/10	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



Login Supervisor

Digitally signed by
Wanda Johnson

Date: 2010.08.25 14:35:17 -06:00

AUG 27 2010

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H10070502-001
Client Sample ID CHHL-1007-100

Report Date: 08/25/10
Collection Date: 07/30/10 15:05
Date Received: 07/30/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	08/05/10 17:02 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	08/05/10 17:02 / abb
Benzene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Bromoform	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Chloroform	0.53	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
2-Hexanone	ND	ug/L		20		SW8260B	08/05/10 17:02 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	08/05/10 17:02 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	08/05/10 17:02 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Styrene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Tetrachloroethene	0.34	ug/L	J	0.50		SW8260B	08/05/10 17:02 / abb
Toluene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
J - Estimated value. The analyte was present but less than the reporting limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H10070502-001
Client Sample ID CHHL-1007-100

Report Date: 08/25/10
Collection Date: 07/30/10 15:05
DateReceived: 07/30/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	08/05/10 17:02 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		70-130		SW8260B	08/05/10 17:02 / abb
Surr: Dibromofluoromethane	96.0	%REC		70-130		SW8260B	08/05/10 17:02 / abb
Surr: p-Bromofluorobenzene	108	%REC		70-130		SW8260B	08/05/10 17:02 / abb
Surr: Toluene-d8	112	%REC		70-130		SW8260B	08/05/10 17:02 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/25/10
Work Order: H10070502

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R64286
Sample ID: CCV080510A										08/05/10 12:05
54 Continuing Calibration Verification Standard										
Acetone		62.0	ug/L	20	124	70	130			
Acrylonitrile		50.4	ug/L	20	101	70	130			
Benzene		4.76	ug/L	1.0	95	70	130			
Bromochloromethane		5.40	ug/L	1.0	108	70	130			
Bromodichloromethane		5.24	ug/L	1.0	105	70	130			
Bromoform		5.16	ug/L	1.0	103	70	130			
Bromomethane		5.44	ug/L	1.0	109	70	130			
Carbon disulfide		5.40	ug/L	1.0	108	70	130			
Carbon tetrachloride		5.00	ug/L	1.0	100	70	130			
Chlorobenzene		5.12	ug/L	1.0	102	70	130			
Chlorodibromomethane		4.88	ug/L	1.0	98	70	130			
Chloroethane		5.44	ug/L	1.0	109	70	130			
Chloroform		5.12	ug/L	1.0	102	80	120			
Chloromethane		5.72	ug/L	1.0	114	70	130			
1,2-Dibromo-3-chloropropane		4.56	ug/L	1.0	91	70	130			
1,2-Dibromoethane		5.24	ug/L	1.0	105	70	130			
Dibromomethane		5.08	ug/L	1.0	102	70	130			
1,2-Dichlorobenzene		4.64	ug/L	1.0	93	70	130			
1,4-Dichlorobenzene		4.92	ug/L	1.0	98	70	130			
trans-1,4-Dichloro-2-butene		5.24	ug/L	1.0	105	70	130			
Dichlorodifluoromethane		5.48	ug/L	1.0	110	70	130			
1,1-Dichloroethane		4.88	ug/L	1.0	98	70	130			
1,2-Dichloroethane		4.80	ug/L	1.0	96	70	130			
1,1-Dichloroethene		5.24	ug/L	1.0	105	80	120			
cis-1,2-Dichloroethene		4.92	ug/L	1.0	98	70	130			
trans-1,2-Dichloroethene		5.08	ug/L	1.0	102	70	130			
1,2-Dichloropropane		4.96	ug/L	1.0	99	80	120			
cis-1,3-Dichloropropene		5.00	ug/L	1.0	100	70	130			
trans-1,3-Dichloropropene		4.84	ug/L	1.0	97	70	130			
Ethylbenzene		5.36	ug/L	1.0	107	80	120			
2-Hexanone		44.8	ug/L	20	90	70	130			
Iodomethane		5.04	ug/L	1.0	101	70	130			
Methyl ethyl ketone		51.6	ug/L	20	103	70	130			
Methyl isobutyl ketone		47.6	ug/L	20	95	70	130			
Methylene chloride		4.96	ug/L	1.0	99	70	130			
Styrene		5.00	ug/L	1.0	100	70	130			
1,1,1,2-Tetrachloroethane		5.16	ug/L	1.0	103	70	130			
1,1,2,2-Tetrachloroethane		5.04	ug/L	1.0	101	70	130			
Tetrachloroethene		5.08	ug/L	1.0	102	70	130			
Toluene		5.24	ug/L	1.0	105	80	120			
1,1,1-Trichloroethane		5.20	ug/L	1.0	104	70	130			
1,1,2-Trichloroethane		4.60	ug/L	1.0	92	70	130			
Trichloroethene		4.88	ug/L	1.0	98	70	130			
Trichlorofluoromethane		5.12	ug/L	1.0	102	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/25/10
Work Order: H10070502

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: R64286		
Sample ID: CCV080510A		54 Continuing Calibration Verification Standard						08/05/10 12:05		
1,2,3-Trichloropropane		4.60	ug/L	1.0	92	70	130			
Vinyl acetate		5.08	ug/L	1.0	102	70	130			
Vinyl chloride		5.00	ug/L	1.0	100	80	120			
m+p-Xylenes		10.5	ug/L	1.0	105	70	130			
o-Xylene		5.12	ug/L	1.0	102	70	130			
Xylenes, Total		15.6	ug/L	1.0	104	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	96	70	130			
Surr: Dibromofluoromethane				1.0	100	70	130			
Surr: p-Bromofluorobenzene				1.0	101	70	130			
Surr: Toluene-d8				1.0	106	70	130			

Method: SW8260B		Batch: R64286						
Sample ID: LCS080510A	54 Laboratory Control Sample	Run: 1SATURN_100805B						08/05/10 12:42
Acetone	50.4 ug/L	20	101	70	130			
Acrylonitrile	49.6 ug/L	20	99	70	130			
Benzene	4.64 ug/L	1.0	93	70	130			
Bromochloromethane	4.80 ug/L	1.0	96	70	130			
Bromodichloromethane	4.88 ug/L	1.0	98	70	130			
Bromoform	4.84 ug/L	1.0	97	70	130			
Bromomethane	5.60 ug/L	1.0	112	70	130			
Carbon disulfide	4.96 ug/L	1.0	99	70	130			
Carbon tetrachloride	4.52 ug/L	1.0	90	70	130			
Chlorobenzene	5.04 ug/L	1.0	101	70	130			
Chlorodibromomethane	4.96 ug/L	1.0	99	70	130			
Chloroethane	5.44 ug/L	1.0	109	70	130			
Chloroform	4.60 ug/L	1.0	92	70	130			
Chloromethane	4.72 ug/L	1.0	94	70	130			
1,2-Dibromo-3-chloropropane	4.84 ug/L	1.0	97	70	130			
1,2-Dibromoethane	4.52 ug/L	1.0	90	70	130			
Dibromomethane	4.88 ug/L	1.0	98	70	130			
1,2-Dichlorobenzene	5.00 ug/L	1.0	100	70	130			
1,4-Dichlorobenzene	5.20 ug/L	1.0	104	70	130			
trans-1,4-Dichloro-2-butene	5.08 ug/L	1.0	102	70	130			
Dichlorodifluoromethane	4.68 ug/L	1.0	94	70	130			
1,1-Dichloroethane	4.68 ug/L	1.0	94	70	130			
1,2-Dichloroethane	4.56 ug/L	1.0	91	70	130			
1,1-Dichloroethene	5.04 ug/L	1.0	101	70	130			
cis-1,2-Dichloroethene	4.56 ug/L	1.0	91	70	130			
trans-1,2-Dichloroethene	4.64 ug/L	1.0	93	70	130			
1,2-Dichloropropane	4.96 ug/L	1.0	99	70	130			
cis-1,3-Dichloropropene	5.00 ug/L	1.0	100	70	130			
trans-1,3-Dichloropropene	4.56 ug/L	1.0	91	70	130			
Ethylbenzene	5.20 ug/L	1.0	104	70	130			
2-Hexanone	44.0 ug/L	20	88	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/25/10
Work Order: H10070502

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R64286
Sample ID: LCS080510A	54	Laboratory Control Sample				Run: 1SATURN_100805B				08/05/10 12:42
Iodomethane		4.36	ug/L	1.0	87	70	130			
Methyl ethyl ketone		50.8	ug/L	20	102	70	130			
Methyl isobutyl ketone		43.2	ug/L	20	86	70	130			
Methylene chloride		4.48	ug/L	1.0	90	70	130			
Styrene		4.96	ug/L	1.0	99	70	130			
1,1,1,2-Tetrachloroethane		4.88	ug/L	1.0	98	70	130			
1,1,2,2-Tetrachloroethane		4.76	ug/L	1.0	95	70	130			
Tetrachloroethene		5.00	ug/L	1.0	100	70	130			
Toluene		4.68	ug/L	1.0	94	70	130			
1,1,1-Trichloroethane		4.68	ug/L	1.0	94	70	130			
1,1,2-Trichloroethane		4.36	ug/L	1.0	87	70	130			
Trichloroethene		4.72	ug/L	1.0	94	70	130			
Trichlorofluoromethane		4.64	ug/L	1.0	93	70	130			
1,2,3-Trichloropropane		4.32	ug/L	1.0	86	70	130			
Vinyl acetate		5.08	ug/L	1.0	102	70	130			
Vinyl chloride		4.28	ug/L	1.0	86	70	130			
m+p-Xylenes		9.68	ug/L	1.0	97	70	130			
o-Xylene		5.08	ug/L	1.0	102	70	130			
Xylenes, Total		14.8	ug/L	1.0	98	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	101	70	130			
Surr: Dibromofluoromethane				1.0	89	70	130			
Surr: p-Bromofluorobenzene				1.0	103	70	130			
Surr: Toluene-d8				1.0	104	70	130			
Sample ID: MB080510A	54	Method Blank				Run: 1SATURN_100805B				08/05/10 13:55
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/25/10
Work Order: H10070502

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R64286
Sample ID: MB080510A										08/05/10 13:55
54 Method Blank										Run: 1SATURN_100805B
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				1.0	106	70	130			
Surr: Dibromofluoromethane				1.0	84	70	130			
Surr: p-Bromofluorobenzene				1.0	102	70	130			
Surr: Toluene-d8				1.0	102	70	130			
Sample ID: H10070502-001AMS										08/05/10 22:31
54 Sample Matrix Spike										Run: 1SATURN_100805B
Acetone		102	ug/L	40	102	70	130			
Acrylonitrile		88.8	ug/L	40	89	70	130			
Benzene		9.92	ug/L	2.0	99	70	130			
Bromochloromethane		15.5	ug/L	2.0	155	70	130			S
Bromodichloromethane		10.2	ug/L	2.0	102	70	130			
Bromoform		10.6	ug/L	2.0	106	70	130			
Bromomethane		11.0	ug/L	2.0	110	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/25/10
Work Order: H10070502

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R64286
Sample ID: H10070502-001AMS	54	Sample Matrix Spike				Run: 1SATURN_100805B				08/05/10 22:31
Carbon disulfide		10.6	ug/L	2.0	106	70	130			
Carbon tetrachloride		10.4	ug/L	2.0	104	70	130			
Chlorobenzene		10.1	ug/L	2.0	101	70	130			
Chlorodibromomethane		9.12	ug/L	2.0	91	70	130			
Chloroethane		9.60	ug/L	2.0	96	70	130			
Chloroform		11.5	ug/L	2.0	110	70	130			
Chloromethane		10.2	ug/L	2.0	102	70	130			
1,2-Dibromo-3-chloropropane		10.6	ug/L	2.0	106	70	130			
1,2-Dibromoethane		9.44	ug/L	2.0	94	70	130			
Dibromomethane		9.76	ug/L	2.0	98	70	130			
1,2-Dichlorobenzene		9.68	ug/L	2.0	97	70	130			
1,4-Dichlorobenzene		10.0	ug/L	2.0	100	70	130			
trans-1,4-Dichloro-2-butene		10.4	ug/L	2.0	104	70	130			
Dichlorodifluoromethane		11.5	ug/L	2.0	115	70	130			
1,1-Dichloroethane		10.2	ug/L	2.0	102	70	130			
1,2-Dichloroethane		9.28	ug/L	2.0	93	70	130			
1,1-Dichloroethene		11.5	ug/L	2.0	115	70	130			
cis-1,2-Dichloroethene		9.84	ug/L	2.0	98	70	130			
trans-1,2-Dichloroethene		9.76	ug/L	2.0	98	70	130			
1,2-Dichloropropane		9.52	ug/L	2.0	95	70	130			
cis-1,3-Dichloropropene		9.76	ug/L	2.0	98	70	130			
trans-1,3-Dichloropropene		9.84	ug/L	2.0	98	70	130			
Ethylbenzene		10.6	ug/L	2.0	106	70	130			
2-Hexanone		87.2	ug/L	40	87	70	130			
Iodomethane		9.12	ug/L	2.0	91	70	130			
Methyl ethyl ketone		96.8	ug/L	40	97	70	130			
Methyl isobutyl ketone		91.2	ug/L	40	91	70	130			
Methylene chloride		8.56	ug/L	2.0	86	70	130			
Styrene		9.44	ug/L	2.0	94	70	130			
1,1,1,2-Tetrachloroethane		9.52	ug/L	2.0	95	70	130			
1,1,2,2-Tetrachloroethane		10.6	ug/L	2.0	106	70	130			
Tetrachloroethene		11.4	ug/L	2.0	111	70	130			
Toluene		10.6	ug/L	2.0	106	70	130			
1,1,1-Trichloroethane		12.9	ug/L	2.0	129	70	130			
1,1,2-Trichloroethane		9.44	ug/L	2.0	94	70	130			
Trichloroethene		10.3	ug/L	2.0	103	70	130			
Trichlorofluoromethane		11.2	ug/L	2.0	112	70	130			
1,2,3-Trichloropropane		11.4	ug/L	2.0	114	70	130			
Vinyl acetate		6.94	ug/L	2.0	69	70	130			
Vinyl chloride		10.0	ug/L	2.0	100	70	130			
m+p-Xylenes		21.0	ug/L	2.0	105	70	130			
o-Xylene		10.1	ug/L	2.0	101	70	130			
Xylenes, Total		31.0	ug/L	2.0	103	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	94	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/25/10
Work Order: H10070502

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R64286
Sample ID: H10070502-001AMS	54	Sample Matrix Spike		Run: 1SATURN_100805B				08/05/10 22:31		
Surr: Dibromofluoromethane				2.0	94	70	130			
Surr: p-Bromofluorobenzene				2.0	102	70	130			
Surr: Toluene-d8				2.0	110	70	130			
Sample ID: H10070502-001AMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_100805B				08/05/10 23:01		
Acetone		96.0	ug/L	40	96	70	130	6.5	20	
Acrylonitrile		97.6	ug/L	40	98	70	130	9.4	20	
Benzene		9.76	ug/L	2.0	98	70	130	1.6	20	
Bromochloromethane		15.0	ug/L	2.0	150	70	130	3.1	20	S
Bromodichloromethane		10.2	ug/L	2.0	102	70	130	0.8	20	
Bromoform		10.8	ug/L	2.0	108	70	130	2.2	20	
Bromomethane		10.7	ug/L	2.0	107	70	130	2.2	20	
Carbon disulfide		11.5	ug/L	2.0	115	70	130	7.9	20	
Carbon tetrachloride		11.0	ug/L	2.0	110	70	130	6	20	
Chlorobenzene		10.4	ug/L	2.0	104	70	130	3.1	20	
Chlorodibromomethane		10.0	ug/L	2.0	100	70	130	9.2	20	
Chloroethane		9.68	ug/L	2.0	97	70	130	0.8	20	
Chloroform		11.7	ug/L	2.0	112	70	130	1.4	20	
Chloromethane		10.6	ug/L	2.0	106	70	130	3.1	20	
1,2-Dibromo-3-chloropropane		10.2	ug/L	2.0	102	70	130	4.6	20	
1,2-Dibromoethane		10.2	ug/L	2.0	102	70	130	7.3	20	
Dibromomethane		9.60	ug/L	2.0	96	70	130	1.7	20	
1,2-Dichlorobenzene		10.2	ug/L	2.0	102	70	130	4.8	20	
1,4-Dichlorobenzene		9.92	ug/L	2.0	99	70	130	0.8	20	
trans-1,4-Dichloro-2-butene		10.8	ug/L	2.0	108	70	130	3.8	20	
Dichlorodifluoromethane		11.0	ug/L	2.0	110	70	130	5	20	
1,1-Dichloroethane		10.1	ug/L	2.0	101	70	130	1.6	20	
1,2-Dichloroethane		9.20	ug/L	2.0	92	70	130	0.9	20	
1,1-Dichloroethene		11.4	ug/L	2.0	114	70	130	1.4	20	
cis-1,2-Dichloroethene		9.76	ug/L	2.0	98	70	130	0.8	20	
trans-1,2-Dichloroethene		10.7	ug/L	2.0	107	70	130	9.4	20	
1,2-Dichloropropane		10.2	ug/L	2.0	102	70	130	6.5	20	
cis-1,3-Dichloropropene		10.1	ug/L	2.0	101	70	130	3.2	20	
trans-1,3-Dichloropropene		9.60	ug/L	2.0	96	70	130	2.5	20	
Ethylbenzene		11.0	ug/L	2.0	110	70	130	3.7	20	
2-Hexanone		94.4	ug/L	40	94	70	130	7.9	20	
Iodomethane		8.72	ug/L	2.0	87	70	130	4.5	20	
Methyl ethyl ketone		104	ug/L	40	104	70	130	7.2	20	
Methyl isobutyl ketone		86.4	ug/L	40	86	70	130	5.4	20	
Methylene chloride		8.96	ug/L	2.0	90	70	130	4.6	20	
Styrene		9.44	ug/L	2.0	94	70	130	0	20	
1,1,1,2-Tetrachloroethane		9.60	ug/L	2.0	96	70	130	0.8	20	
1,1,2,2-Tetrachloroethane		10.5	ug/L	2.0	105	70	130	1.5	20	
Tetrachloroethene		11.9	ug/L	2.0	116	70	130	4.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 08/25/10
Work Order: H10070502

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R64286
Sample ID: H10070502-001AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_100805B 08/05/10 23:01
Toluene		10.6	ug/L	2.0	106	70	130	0	20	
1,1,1-Trichloroethane		13.4	ug/L	2.0	134	70	130	4.3	20	S
1,1,2-Trichloroethane		9.60	ug/L	2.0	96	70	130	1.7	20	
Trichloroethene		10.2	ug/L	2.0	102	70	130	0.8	20	
Trichlorofluoromethane		11.3	ug/L	2.0	113	70	130	0.7	20	
1,2,3-Trichloropropane		11.9	ug/L	2.0	119	70	130	4.1	20	
Vinyl acetate		7.30	ug/L	2.0	73	70	130	4.9	20	
Vinyl chloride		9.84	ug/L	2.0	98	70	130	1.6	20	
m+p-Xylenes		21.7	ug/L	2.0	108	70	130	3.4	20	
o-Xylene		9.84	ug/L	2.0	98	70	130	2.4	20	
Xylenes, Total		31.5	ug/L	2.0	105	70	130	1.5	20	
Surr: 1,2-Dichloroethane-d4				2.0	90	70	130	0	20	
Surr: Dibromofluoromethane				2.0	95	70	130	0	20	
Surr: p-Bromofluorobenzene				2.0	104	70	130	0	20	
Surr: Toluene-d8				2.0	114	70	130	0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

Workorder Receipt Checklist



H10070502

Hydrometrics Inc

Login completed by: Tracy L. Lorash

Date Received: 7/30/2010

Reviewed by: BL2000\ablackburn

Received by: rit

Reviewed Date: 8/6/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature:	14.5°C On Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

None



3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

PROJ. NO.		PROJECT NAME		NO. OF CON- TAINERS											REMARKS		
SAMPLERS: (Signature)					Commons UF/RAW	Nutrients UF/H ₂ SO ₄	Diss. Metal F/HNO ₃	CN UF/NaOH	Total Metals UF/HNO ₃	Total Recoverable Metals UF/HNO ₃	BTEX	TPH	VOC/UF/HCL	Method 8260		DK=0.0005 mg/L	Long List
DATE	TIME	COMP	GRAB		SAMPLE NUMBER												
7/30	1505		X	CHHL-1007-100	3												H10070502
Relinquished (Signature)		Date/Time		Received by: (Signature)		Lab		P.O. #		Shipped via: Bus, Fed Ex, UPS							
[Signature]		7/30/10 15:35		[Signature]				HLN10175		Other _____							
Relinquished (Signature)		Date/Time		Received by: (Signature)		Remarks		Air Bill # _____									
[Signature]						temp 14.5 hand, cooler, etc											
Relinquished (Signature)		Date/Time		Received for Laboratory by: (Signature)		Date/Time		Enclosed:									
[Signature]								☐ Parameter sheet w/detection limits									
								☐ QA/QC standard mixing instructions		☐ Cover letter							
								☐ Other _____									

HFORM-1-5/99

Return results & electronic copy to:
QA/QC Dept. at address at top of page

Split Samples:

☐ Accepted ☐ Declined

Summary

Site	Sample Code#	Date	Time	Bottles
Sprinkle-	LHHL-1008-100	8/31/70	1300	2/4F/HCL/VOC 1/4F/RM/VOC

Weather:
Calm, Overcast, 60°F

GWES

Site	Time	Hr	Floor	Total 1	Total 2
HL-99-3	1305	3041.7	0.0 37.1	421028	420715
HL-99-2	1310	3163.4	0.0	597651	597330
HL-99-1	1315	3164.8	4.23	52544.9	52409.5



ANALYTICAL SUMMARY REPORT

September 21, 2010

Hydrometrics Inc
3020 Bozeman Ave
Helena, MT 59601

Workorder No.: H10090002

Project Name: 1273 City of Helena

Energy Laboratories Inc received the following 1 sample for Hydrometrics Inc on 9/1/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10090002-001	CHHL-1008-100	08/31/10 13:00	09/01/10	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Wanda Johnson

Login Supervisor

Digitally signed by
Wanda Johnson
Date: 2010.09.21 13:13:37 -06:00

SEP 24 2010

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H10090002-001
Client Sample ID: CHHL-1008-100

Report Date: 09/21/10
Collection Date: 08/31/10 13:00
Date Received: 09/01/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	09/09/10 12:41 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	09/09/10 12:41 / abb
Benzene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Bromoform	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Chloroform	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
2-Hexanone	ND	ug/L		20		SW8260B	09/09/10 12:41 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	09/09/10 12:41 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	09/09/10 12:41 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Styrene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Toluene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H10090002-001
Client Sample ID CHHL-1008-100

Report Date: 09/21/10
Collection Date: 08/31/10 13:00
DateReceived: 09/01/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	09/09/10 12:41 / abb
Surr: 1,2-Dichloroethane-d4	96.0	%REC		70-130		SW8260B	09/09/10 12:41 / abb
Surr: Dibromofluoromethane	97.0	%REC		70-130		SW8260B	09/09/10 12:41 / abb
Surr: p-Bromofluorobenzene	111	%REC		70-130		SW8260B	09/09/10 12:41 / abb
Surr: Toluene-d8	112	%REC		70-130		SW8260B	09/09/10 12:41 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/21/10
Work Order: H10090002

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: R65303		
Sample ID: CCV090910A		54 Continuing Calibration Verification Standard							09/09/10 09:47	
Acetone		52.0	ug/L	20	104	70	130			
Acrylonitrile		50.4	ug/L	20	101	70	130			
Benzene		5.04	ug/L	1.0	101	70	130			
Bromochloromethane		6.00	ug/L	1.0	120	70	130			
Bromodichloromethane		4.96	ug/L	1.0	99	70	130			
Bromoform		5.28	ug/L	1.0	106	70	130			
Bromomethane		4.96	ug/L	1.0	99	70	130			
Carbon disulfide		5.04	ug/L	1.0	101	70	130			
Carbon tetrachloride		5.24	ug/L	1.0	105	70	130			
Chlorobenzene		5.28	ug/L	1.0	106	70	130			
Chlorodibromomethane		4.88	ug/L	1.0	98	70	130			
Chloroethane		4.84	ug/L	1.0	97	70	130			
Chloroform		5.76	ug/L	1.0	115	80	120			
Chloromethane		5.32	ug/L	1.0	106	70	130			
1,2-Dibromo-3-chloropropane		4.92	ug/L	1.0	98	70	130			
1,2-Dibromoethane		4.92	ug/L	1.0	98	70	130			
Dibromomethane		4.96	ug/L	1.0	99	70	130			
1,2-Dichlorobenzene		4.92	ug/L	1.0	98	70	130			
1,4-Dichlorobenzene		5.08	ug/L	1.0	102	70	130			
trans-1,4-Dichloro-2-butene		5.52	ug/L	1.0	110	70	130			
Dichlorodifluoromethane		4.88	ug/L	1.0	98	70	130			
1,1-Dichloroethane		5.20	ug/L	1.0	104	70	130			
1,2-Dichloroethane		4.84	ug/L	1.0	97	70	130			
1,1-Dichloroethene		5.28	ug/L	1.0	106	80	120			
cis-1,2-Dichloroethene		5.16	ug/L	1.0	103	70	130			
trans-1,2-Dichloroethene		4.96	ug/L	1.0	99	70	130			
1,2-Dichloropropane		5.08	ug/L	1.0	102	80	120			
cis-1,3-Dichloropropene		5.12	ug/L	1.0	102	70	130			
trans-1,3-Dichloropropene		4.96	ug/L	1.0	99	70	130			
Ethylbenzene		5.40	ug/L	1.0	108	80	120			
2-Hexanone		46.4	ug/L	20	93	70	130			
Iodomethane		4.76	ug/L	1.0	95	70	130			
Methyl ethyl ketone		55.2	ug/L	20	110	70	130			
Methyl isobutyl ketone		48.0	ug/L	20	96	70	130			
Methylene chloride		4.96	ug/L	1.0	99	70	130			
Styrene		5.04	ug/L	1.0	101	70	130			
1,1,1,2-Tetrachloroethane		5.16	ug/L	1.0	103	70	130			
1,1,2,2-Tetrachloroethane		5.12	ug/L	1.0	102	70	130			
Tetrachloroethene		5.16	ug/L	1.0	103	70	130			
Toluene		5.20	ug/L	1.0	104	80	120			
1,1,1-Trichloroethane		6.20	ug/L	1.0	124	70	130			
1,1,2-Trichloroethane		5.20	ug/L	1.0	104	70	130			
Trichloroethene		5.00	ug/L	1.0	100	70	130			
Trichlorofluoromethane		5.00	ug/L	1.0	100	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/21/10
Work Order: H10090002

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B								Analytical Run: R65303		
Sample ID: CCV090910A								54 Continuing Calibration Verification Standard		
								09/09/10 09:47		
1,2,3-Trichloropropane		6.32	ug/L	1.0	126	70	130			
Vinyl acetate		4.88	ug/L	1.0	98	70	130			
Vinyl chloride		4.88	ug/L	1.0	98	80	120			
m+p-Xylenes		10.5	ug/L	1.0	105	70	130			
o-Xylene		5.04	ug/L	1.0	101	70	130			
Xylenes, Total		15.6	ug/L	1.0	104	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	103	70	130			
Surr: Dibromofluoromethane				1.0	98	70	130			
Surr: p-Bromofluorobenzene				1.0	100	70	130			
Surr: Toluene-d8				1.0	110	70	130			
Method: SW8260B								Batch: R65303		
Sample ID: LCS090910A								54 Laboratory Control Sample		
								Run: 1SATURN_100909B		
								09/09/10 10:50		
Acetone		51.2	ug/L	20	102	70	130			
Acrylonitrile		51.6	ug/L	20	103	70	130			
Benzene		5.00	ug/L	1.0	100	70	130			
Bromochloromethane		5.36	ug/L	1.0	107	70	130			
Bromodichloromethane		5.00	ug/L	1.0	100	70	130			
Bromoform		5.16	ug/L	1.0	103	70	130			
Bromomethane		5.28	ug/L	1.0	106	70	130			
Carbon disulfide		4.96	ug/L	1.0	99	70	130			
Carbon tetrachloride		5.12	ug/L	1.0	102	70	130			
Chlorobenzene		5.12	ug/L	1.0	102	70	130			
Chlorodibromomethane		4.92	ug/L	1.0	98	70	130			
Chloroethane		5.32	ug/L	1.0	106	70	130			
Chloroform		5.72	ug/L	1.0	114	70	130			
Chloromethane		5.64	ug/L	1.0	113	70	130			
1,2-Dibromo-3-chloropropane		4.68	ug/L	1.0	94	70	130			
1,2-Dibromoethane		4.84	ug/L	1.0	97	70	130			
Dibromomethane		4.84	ug/L	1.0	97	70	130			
1,2-Dichlorobenzene		4.64	ug/L	1.0	93	70	130			
1,4-Dichlorobenzene		5.20	ug/L	1.0	104	70	130			
trans-1,4-Dichloro-2-butene		5.60	ug/L	1.0	112	70	130			
Dichlorodifluoromethane		5.04	ug/L	1.0	101	70	130			
1,1-Dichloroethane		4.96	ug/L	1.0	99	70	130			
1,2-Dichloroethane		5.04	ug/L	1.0	101	70	130			
1,1-Dichloroethene		5.36	ug/L	1.0	107	70	130			
cis-1,2-Dichloroethene		4.68	ug/L	1.0	94	70	130			
trans-1,2-Dichloroethene		5.08	ug/L	1.0	102	70	130			
1,2-Dichloropropane		5.32	ug/L	1.0	106	70	130			
cis-1,3-Dichloropropene		4.92	ug/L	1.0	98	70	130			
trans-1,3-Dichloropropene		4.72	ug/L	1.0	94	70	130			
Ethylbenzene		5.32	ug/L	1.0	106	70	130			
2-Hexanone		44.8	ug/L	20	90	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/21/10
Work Order: H10090002

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65303
Sample ID: LCS090910A	54 Laboratory Control Sample					Run: 1SATURN_100909B				09/09/10 10:50
Iodomethane		4.40	ug/L	1.0	88	70	130			
Methyl ethyl ketone		45.6	ug/L	20	91	70	130			
Methyl isobutyl ketone		47.2	ug/L	20	94	70	130			
Methylene chloride		4.52	ug/L	1.0	90	70	130			
Styrene		5.12	ug/L	1.0	102	70	130			
1,1,1,2-Tetrachloroethane		5.16	ug/L	1.0	103	70	130			
1,1,2,2-Tetrachloroethane		4.88	ug/L	1.0	98	70	130			
Tetrachloroethene		5.16	ug/L	1.0	103	70	130			
Toluene		5.04	ug/L	1.0	101	70	130			
1,1,1-Trichloroethane		6.44	ug/L	1.0	129	70	130			
1,1,2-Trichloroethane		4.64	ug/L	1.0	93	70	130			
Trichloroethene		5.16	ug/L	1.0	103	70	130			
Trichlorofluoromethane		5.12	ug/L	1.0	102	70	130			
1,2,3-Trichloropropane		5.84	ug/L	1.0	117	70	130			
Vinyl acetate		5.04	ug/L	1.0	101	70	130			
Vinyl chloride		4.84	ug/L	1.0	97	70	130			
m+p-Xylenes		10.7	ug/L	1.0	107	70	130			
o-Xylene		5.12	ug/L	1.0	102	70	130			
Xylenes, Total		15.8	ug/L	1.0	105	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	95	70	130			
Surr: Dibromofluoromethane				1.0	97	70	130			
Surr: p-Bromofluorobenzene				1.0	99	70	130			
Surr: Toluene-d8				1.0	108	70	130			
Sample ID: MB090910A	54 Method Blank					Run: 1SATURN_100909B				09/09/10 12:11
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Bromochloromethane		ND	ug/L	1.0						
Bromodichloromethane		ND	ug/L	1.0						
Bromoform		ND	ug/L	1.0						
Bromomethane		ND	ug/L	1.0						
Carbon disulfide		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chlorobenzene		ND	ug/L	1.0						
Chlorodibromomethane		ND	ug/L	1.0						
Chloroethane		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
1,2-Dibromo-3-chloropropane		ND	ug/L	1.0						
1,2-Dibromoethane		ND	ug/L	1.0						
Dibromomethane		ND	ug/L	1.0						
1,2-Dichlorobenzene		ND	ug/L	1.0						
1,4-Dichlorobenzene		ND	ug/L	1.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/21/10
Work Order: H10090002

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65303
Sample ID: MB090910A	54	Method Blank				Run: 1SATURN_100909B				09/09/10 12:11
trans-1,4-Dichloro-2-butene		ND	ug/L	1.0						
Dichlorodifluoromethane		ND	ug/L	1.0						
1,1-Dichloroethane		ND	ug/L	1.0						
1,2-Dichloroethane		ND	ug/L	1.0						
1,1-Dichloroethene		ND	ug/L	1.0						
cis-1,2-Dichloroethene		ND	ug/L	1.0						
trans-1,2-Dichloroethene		ND	ug/L	1.0						
1,2-Dichloropropane		ND	ug/L	1.0						
cis-1,3-Dichloropropene		ND	ug/L	1.0						
trans-1,3-Dichloropropene		ND	ug/L	1.0						
Ethylbenzene		ND	ug/L	1.0						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Styrene		ND	ug/L	1.0						
1,1,1,2-Tetrachloroethane		ND	ug/L	1.0						
1,1,2,2-Tetrachloroethane		ND	ug/L	1.0						
Tetrachloroethene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
1,1,1-Trichloroethane		ND	ug/L	1.0						
1,1,2-Trichloroethane		ND	ug/L	1.0						
Trichloroethene		ND	ug/L	1.0						
Trichlorofluoromethane		ND	ug/L	1.0						
1,2,3-Trichloropropane		ND	ug/L	1.0						
Vinyl acetate		ND	ug/L	1.0						
Vinyl chloride		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichloroethane-d4				1.0	96	70	130			
Surr: Dibromofluoromethane				1.0	96	70	130			
Surr: p-Bromofluorobenzene				1.0	110	70	130			
Surr: Toluene-d8				1.0	108	70	130			
Sample ID: H10090002-001AMS										Run: 1SATURN_100909B
	54	Sample Matrix Spike				Run: 1SATURN_100909B				09/13/10 13:50
Acetone		102	ug/L	40	102	70	130			
Acrylonitrile		99.2	ug/L	40	99	70	130			
Benzene		9.76	ug/L	2.0	98	70	130			
Bromochloromethane		12.4	ug/L	2.0	124	70	130			
Bromodichloromethane		9.68	ug/L	2.0	97	70	130			
Bromoform		11.1	ug/L	2.0	111	70	130			
Bromomethane		9.28	ug/L	2.0	93	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/21/10
Work Order: H10090002

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65303
Sample ID: H10090002-001AMS	54	Sample Matrix Spike		Run: 1SATURN_100909B				09/13/10 13:50		
Carbon disulfide		9.68	ug/L	2.0	97	70	130			
Carbon tetrachloride		10.5	ug/L	2.0	105	70	130			
Chlorobenzene		10.5	ug/L	2.0	105	70	130			
Chlorodibromomethane		9.52	ug/L	2.0	95	70	130			
Chloroethane		9.36	ug/L	2.0	94	70	130			
Chloroform		11.8	ug/L	2.0	118	70	130			
Chloromethane		10.6	ug/L	2.0	106	70	130			
1,2-Dibromo-3-chloropropane		10.1	ug/L	2.0	101	70	130			
1,2-Dibromoethane		9.60	ug/L	2.0	96	70	130			
Dibromomethane		10.1	ug/L	2.0	101	70	130			
1,2-Dichlorobenzene		9.60	ug/L	2.0	96	70	130			
1,4-Dichlorobenzene		10.0	ug/L	2.0	100	70	130			
trans-1,4-Dichloro-2-butene		11.2	ug/L	2.0	112	70	130			
Dichlorodifluoromethane		10.6	ug/L	2.0	106	70	130			
1,1-Dichloroethane		10.1	ug/L	2.0	101	70	130			
1,2-Dichloroethane		9.36	ug/L	2.0	94	70	130			
1,1-Dichloroethene		10.3	ug/L	2.0	103	70	130			
cis-1,2-Dichloroethene		10.0	ug/L	2.0	100	70	130			
trans-1,2-Dichloroethene		9.84	ug/L	2.0	98	70	130			
1,2-Dichloropropane		9.76	ug/L	2.0	98	70	130			
cis-1,3-Dichloropropene		10.2	ug/L	2.0	102	70	130			
trans-1,3-Dichloropropene		9.04	ug/L	2.0	90	70	130			
Ethylbenzene		10.6	ug/L	2.0	106	70	130			
2-Hexanone		92.0	ug/L	40	92	70	130			
Iodomethane		8.80	ug/L	2.0	88	70	130			
Methyl ethyl ketone		106	ug/L	40	106	70	130			
Methyl isobutyl ketone		91.2	ug/L	40	91	70	130			
Methylene chloride		9.20	ug/L	2.0	92	70	130			
Styrene		9.52	ug/L	2.0	95	70	130			
1,1,1,2-Tetrachloroethane		9.76	ug/L	2.0	98	70	130			
1,1,2,2-Tetrachloroethane		10.9	ug/L	2.0	109	70	130			
Tetrachloroethene		10.6	ug/L	2.0	106	70	130			
Toluene		10.7	ug/L	2.0	107	70	130			
1,1,1-Trichloroethane		12.7	ug/L	2.0	127	70	130			
1,1,2-Trichloroethane		9.60	ug/L	2.0	96	70	130			
Trichloroethene		10.0	ug/L	2.0	100	70	130			
Trichlorofluoromethane		9.92	ug/L	2.0	99	70	130			
1,2,3-Trichloropropane		11.7	ug/L	2.0	117	70	130			
Vinyl acetate		10.6	ug/L	2.0	106	70	130			
Vinyl chloride		8.48	ug/L	2.0	85	70	130			
m+p-Xylenes		21.0	ug/L	2.0	105	70	130			
o-Xylene		10.1	ug/L	2.0	101	70	130			
Xylenes, Total		31.0	ug/L	2.0	103	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	97	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/21/10
Work Order: H10090002

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65303
Sample ID: H10090002-001AMS	54	Sample Matrix Spike		Run: 1SATURN_100909B		09/13/10 13:50				
Surr: Dibromofluoromethane				2.0	96	70	130			
Surr: p-Bromofluorobenzene				2.0	110	70	130			
Surr: Toluene-d8				2.0	105	70	130			
Sample ID: H10090002-001AMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_100909B		09/13/10 14:19				
Acetone		103	ug/L	40	103	70	130	1.6	20	
Acrylonitrile		103	ug/L	40	103	70	130	4	20	
Benzene		9.60	ug/L	2.0	96	70	130	1.7	20	
Bromochloromethane		13.7	ug/L	2.0	137	70	130	9.8	20	S
Bromodichloromethane		10.2	ug/L	2.0	102	70	130	5.6	20	
Bromoform		10.9	ug/L	2.0	109	70	130	2.2	20	
Bromomethane		9.36	ug/L	2.0	94	70	130	0.9	20	
Carbon disulfide		10.2	ug/L	2.0	102	70	130	5.6	20	
Carbon tetrachloride		10.4	ug/L	2.0	104	70	130	0.8	20	
Chlorobenzene		10.7	ug/L	2.0	107	70	130	2.3	20	
Chlorodibromomethane		10.3	ug/L	2.0	103	70	130	8.1	20	
Chloroethane		9.52	ug/L	2.0	95	70	130	1.7	20	
Chloroform		11.2	ug/L	2.0	112	70	130	4.9	20	
Chloromethane		11.4	ug/L	2.0	114	70	130	7.3	20	
1,2-Dibromo-3-chloropropane		10.0	ug/L	2.0	100	70	130	0.8	20	
1,2-Dibromoethane		10.3	ug/L	2.0	103	70	130	7.2	20	
Dibromomethane		10.5	ug/L	2.0	105	70	130	3.9	20	
1,2-Dichlorobenzene		9.92	ug/L	2.0	99	70	130	3.3	20	
1,4-Dichlorobenzene		10.8	ug/L	2.0	108	70	130	7.7	20	
trans-1,4-Dichloro-2-butene		12.2	ug/L	2.0	122	70	130	8.9	20	
Dichlorodifluoromethane		10.8	ug/L	2.0	108	70	130	2.2	20	
1,1-Dichloroethane		9.92	ug/L	2.0	99	70	130	1.6	20	
1,2-Dichloroethane		9.60	ug/L	2.0	96	70	130	2.5	20	
1,1-Dichloroethene		10.5	ug/L	2.0	105	70	130	1.5	20	
cis-1,2-Dichloroethene		10.1	ug/L	2.0	101	70	130	0.8	20	
trans-1,2-Dichloroethene		9.68	ug/L	2.0	97	70	130	1.6	20	
1,2-Dichloropropane		10.3	ug/L	2.0	103	70	130	5.6	20	
cis-1,3-Dichloropropene		9.92	ug/L	2.0	99	70	130	2.4	20	
trans-1,3-Dichloropropene		10.2	ug/L	2.0	102	70	130	12	20	
Ethylbenzene		11.3	ug/L	2.0	113	70	130	5.8	20	
2-Hexanone		92.0	ug/L	40	92	70	130	0	20	
Iodomethane		8.56	ug/L	2.0	86	70	130	2.8	20	
Methyl ethyl ketone		102	ug/L	40	102	70	130	3.9	20	
Methyl isobutyl ketone		93.6	ug/L	40	94	70	130	2.6	20	
Methylene chloride		9.28	ug/L	2.0	93	70	130	0.9	20	
Styrene		9.60	ug/L	2.0	96	70	130	0.8	20	
1,1,1,2-Tetrachloroethane		9.52	ug/L	2.0	95	70	130	2.5	20	
1,1,2,2-Tetrachloroethane		11.2	ug/L	2.0	112	70	130	2.9	20	
Tetrachloroethene		10.2	ug/L	2.0	102	70	130	3.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 09/21/10
Work Order: H10090002

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65303
Sample ID: H10090002-001AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_100909B 09/13/10 14:19
Toluene		10.6	ug/L	2.0	106	70	130	1.5	20	
1,1,1-Trichloroethane		12.5	ug/L	2.0	125	70	130	1.9	20	
1,1,2-Trichloroethane		9.28	ug/L	2.0	93	70	130	3.4	20	
Trichloroethene		10.4	ug/L	2.0	104	70	130	3.9	20	
Trichlorofluoromethane		10.2	ug/L	2.0	102	70	130	3.2	20	
1,2,3-Trichloropropane		11.7	ug/L	2.0	117	70	130	0	20	
Vinyl acetate		9.92	ug/L	2.0	99	70	130	6.2	20	
Vinyl chloride		9.36	ug/L	2.0	94	70	130	9.9	20	
m+p-Xylenes		21.4	ug/L	2.0	107	70	130	1.9	20	
o-Xylene		10.8	ug/L	2.0	108	70	130	6.9	20	
Xylenes, Total		32.2	ug/L	2.0	107	70	130	3.5	20	
Surr: 1,2-Dichloroethane-d4				2.0	94	70	130	0	20	
Surr: Dibromofluoromethane				2.0	97	70	130	0	20	
Surr: p-Bromofluorobenzene				2.0	107	70	130	0	20	
Surr: Toluene-d8				2.0	110	70	130	0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



H10090002

Hydrometrics Inc

Login completed by: Tracy L. Lorash

Date Received: 9/1/2010

Reviewed by: BL2000\ablackburn

Received by: TLL

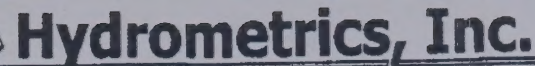
Reviewed Date: 9/7/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature:	5.5°C On Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

None



3020 Bozeman Avenue • Helena, Montana 59601 • (406) 443-4150

[illegible]

Sprinkler CHHL- 9/30/10 1600
1004-
100

Weather

85°, Calm, Clear

GWES

<u>Site</u>	<u>Time</u>	<u>Sta</u>	<u>Flow</u>	<u>Total 1</u>	<u>Total 2</u>
HL-94-3	1610	3830.1	35.7	9328.9	2024.6
HL-94-2	1615	3902.7	—	—	—
HL-94-1	1620	3904.0	—	28151	—

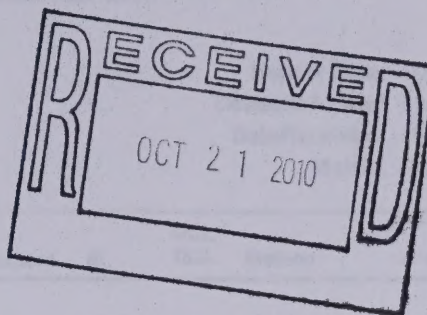
ANALYTICAL SUMMARY REPORT

October 20, 2010

 Hydrometrics Inc
 3020 Bozeman Ave
 Helena, MT 59601

Workorder No.: H10100021

Project Name: 1273 City of Helena



Energy Laboratories Inc received the following 1 sample for Hydrometrics Inc on 10/1/2010 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
H10100021-001	CHHL-1009-100	09/30/10 16:00	10/01/10	Aqueous	8260-Volatile Organic Comp, 40 CFR Part 258 App I

This report was prepared by Energy Laboratories, Inc., 3161 E. Lyndale Ave., Helena, MT 59604. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:

Login Supervisor

 Digitally signed by
 Wanda Johnson
 Date: 2010.10.20 07:45:05 -06:00

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H10100021-001
Client Sample ID CHHL-1009-100

Report Date: 10/20/10
Collection Date: 09/30/10 16:00
Date Received: 10/01/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
Acetone	ND	ug/L		20		SW8260B	10/06/10 16:39 / abb
Acrylonitrile	ND	ug/L		20		SW8260B	10/06/10 16:39 / abb
Benzene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Bromochloromethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Bromodichloromethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Bromoform	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Bromomethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Carbon disulfide	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Carbon tetrachloride	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Chlorobenzene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Chlorodibromomethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Chloroethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Chloroform	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Chloromethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,2-Dibromo-3-chloropropane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,2-Dibromoethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Dibromomethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,2-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,4-Dichlorobenzene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
trans-1,4-Dichloro-2-butene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Dichlorodifluoromethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,1-Dichloroethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,2-Dichloroethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,1-Dichloroethene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
cis-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
trans-1,2-Dichloroethene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,2-Dichloropropane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
cis-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
trans-1,3-Dichloropropene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Ethylbenzene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
2-Hexanone	ND	ug/L		20		SW8260B	10/06/10 16:39 / abb
Iodomethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Methyl ethyl ketone	ND	ug/L		20		SW8260B	10/06/10 16:39 / abb
Methyl isobutyl ketone	ND	ug/L		20		SW8260B	10/06/10 16:39 / abb
Methylene chloride	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Styrene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,1,1,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,1,2,2-Tetrachloroethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Tetrachloroethene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Toluene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,1,1-Trichloroethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
1,1,2-Trichloroethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Trichloroethene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Trichlorofluoromethane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Client: Hydrometrics Inc
Project: 1273 City of Helena
Lab ID: H10100021-001
Client Sample ID CHHL-1009-100

Report Date: 10/20/10
Collection Date: 09/30/10 16:00
DateReceived: 10/01/10
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
VOLATILE ORGANIC COMPOUNDS							
1,2,3-Trichloropropane	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Vinyl acetate	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Vinyl chloride	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
m+p-Xylenes	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
o-Xylene	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Xylenes, Total	ND	ug/L		0.50		SW8260B	10/06/10 16:39 / abb
Surr: 1,2-Dichloroethane-d4	100	%REC		70-130		SW8260B	10/06/10 16:39 / abb
Surr: Dibromofluoromethane	103	%REC		70-130		SW8260B	10/06/10 16:39 / abb
Surr: p-Bromofluorobenzene	110	%REC		70-130		SW8260B	10/06/10 16:39 / abb
Surr: Toluene-d8	110	%REC		70-130		SW8260B	10/06/10 16:39 / abb

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/20/10
Work Order: H10100021

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R65965
Sample ID: CCV100610A										10/06/10 10:49
54 Continuing Calibration Verification Standard										
Acetone		58.0	ug/L	20	116	70	130			
Acrylonitrile		51.6	ug/L	20	103	70	130			
Benzene		4.96	ug/L	1.0	99	70	130			
Bromochloromethane		6.20	ug/L	1.0	124	70	130			
Bromodichloromethane		4.92	ug/L	1.0	98	70	130			
Bromoform		5.04	ug/L	1.0	101	70	130			
Bromomethane		4.44	ug/L	1.0	89	70	130			
Carbon disulfide		5.60	ug/L	1.0	112	70	130			
Carbon tetrachloride		5.16	ug/L	1.0	103	70	130			
Chlorobenzene		4.88	ug/L	1.0	98	70	130			
Chlorodibromomethane		5.00	ug/L	1.0	100	70	130			
Chloroethane		4.88	ug/L	1.0	98	70	130			
Chloroform		6.24	ug/L	1.0	125	80	120			S
Chloromethane		4.88	ug/L	1.0	98	70	130			
1,2-Dibromo-3-chloropropane		5.12	ug/L	1.0	102	70	130			
1,2-Dibromoethane		4.96	ug/L	1.0	99	70	130			
Dibromomethane		4.76	ug/L	1.0	95	70	130			
1,2-Dichlorobenzene		4.72	ug/L	1.0	94	70	130			
1,4-Dichlorobenzene		4.96	ug/L	1.0	99	70	130			
trans-1,4-Dichloro-2-butene		5.64	ug/L	1.0	113	70	130			
Dichlorodifluoromethane		4.60	ug/L	1.0	92	70	130			
1,1-Dichloroethane		5.08	ug/L	1.0	102	70	130			
1,2-Dichloroethane		4.88	ug/L	1.0	98	70	130			
1,1-Dichloroethene		5.20	ug/L	1.0	104	80	120			
cis-1,2-Dichloroethene		5.04	ug/L	1.0	101	70	130			
trans-1,2-Dichloroethene		5.20	ug/L	1.0	104	70	130			
1,2-Dichloropropane		4.60	ug/L	1.0	92	80	120			
cis-1,3-Dichloropropene		4.88	ug/L	1.0	98	70	130			
trans-1,3-Dichloropropene		4.72	ug/L	1.0	94	70	130			
Ethylbenzene		5.04	ug/L	1.0	101	80	120			
2-Hexanone		49.6	ug/L	20	99	70	130			
Iodomethane		5.24	ug/L	1.0	105	70	130			
Methyl ethyl ketone		63.6	ug/L	20	127	70	130			
Methyl isobutyl ketone		49.2	ug/L	20	98	70	130			
Methylene chloride		4.92	ug/L	1.0	98	70	130			
Styrene		4.84	ug/L	1.0	97	70	130			
1,1,1,2-Tetrachloroethane		4.92	ug/L	1.0	98	70	130			
1,1,2,2-Tetrachloroethane		5.24	ug/L	1.0	105	70	130			
Tetrachloroethene		4.72	ug/L	1.0	94	70	130			
Toluene		4.84	ug/L	1.0	97	80	120			
1,1,1-Trichloroethane		6.32	ug/L	1.0	126	70	130			
1,1,2-Trichloroethane		4.72	ug/L	1.0	94	70	130			
Trichloroethene		4.56	ug/L	1.0	91	70	130			
Trichlorofluoromethane		5.52	ug/L	1.0	110	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/20/10
Work Order: H10100021

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Analytical Run: R65965
Sample ID: CCV100610A										10/06/10 10:49
54 Continuing Calibration Verification Standard										
1,2,3-Trichloropropane		5.44	ug/L	1.0	109	70	130			
Vinyl acetate		5.20	ug/L	1.0	104	70	130			
Vinyl chloride		5.00	ug/L	1.0	100	80	120			
m+p-Xylenes		10.2	ug/L	1.0	102	70	130			
o-Xylene		5.08	ug/L	1.0	102	70	130			
Xylenes, Total		15.3	ug/L	1.0	102	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	99	70	130			
Surr: Dibromofluoromethane				1.0	104	70	130			
Surr: p-Bromofluorobenzene				1.0	104	70	130			
Surr: Toluene-d8				1.0	102	70	130			
Method: SW8260B										Batch: R65965
Sample ID: LCS100610A										10/06/10 11:29
54 Laboratory Control Sample										
Run: 1SATURN_101006A										
Acetone		53.2	ug/L	20	106	70	130			
Acrylonitrile		51.2	ug/L	20	102	70	130			
Benzene		5.24	ug/L	1.0	105	70	130			
Bromochloromethane		5.68	ug/L	1.0	114	70	130			
Bromodichloromethane		5.16	ug/L	1.0	103	70	130			
Bromoform		5.60	ug/L	1.0	112	70	130			
Bromomethane		5.04	ug/L	1.0	101	70	130			
Carbon disulfide		5.24	ug/L	1.0	105	70	130			
Carbon tetrachloride		5.36	ug/L	1.0	107	70	130			
Chlorobenzene		5.48	ug/L	1.0	110	70	130			
Chlorodibromomethane		5.04	ug/L	1.0	101	70	130			
Chloroethane		5.20	ug/L	1.0	104	70	130			
Chloroform		6.32	ug/L	1.0	126	70	130			
Chloromethane		5.76	ug/L	1.0	115	70	130			
1,2-Dibromo-3-chloropropane		5.12	ug/L	1.0	102	70	130			
1,2-Dibromoethane		4.88	ug/L	1.0	98	70	130			
Dibromomethane		4.92	ug/L	1.0	98	70	130			
1,2-Dichlorobenzene		4.84	ug/L	1.0	97	70	130			
1,4-Dichlorobenzene		5.08	ug/L	1.0	102	70	130			
trans-1,4-Dichloro-2-butene		4.56	ug/L	1.0	91	70	130			
Dichlorodifluoromethane		5.12	ug/L	1.0	102	70	130			
1,1-Dichloroethane		5.52	ug/L	1.0	110	70	130			
1,2-Dichloroethane		5.16	ug/L	1.0	103	70	130			
1,1-Dichloroethene		5.44	ug/L	1.0	109	70	130			
cis-1,2-Dichloroethene		5.52	ug/L	1.0	110	70	130			
trans-1,2-Dichloroethene		5.24	ug/L	1.0	105	70	130			
1,2-Dichloropropane		5.04	ug/L	1.0	101	70	130			
cis-1,3-Dichloropropene		5.04	ug/L	1.0	101	70	130			
trans-1,3-Dichloropropene		4.96	ug/L	1.0	99	70	130			
Ethylbenzene		5.40	ug/L	1.0	108	70	130			
2-Hexanone		46.4	ug/L	20	93	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/20/10
Work Order: H10100021

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65965
Sample ID: LCS100610A										10/06/10 11:29
54 Laboratory Control Sample										Run: 1SATURN_101006A
Iodomethane		4.80	ug/L	1.0	96	70	130			
Methyl ethyl ketone		56.4	ug/L	20	113	70	130			
Methyl isobutyl ketone		47.2	ug/L	20	94	70	130			
Methylene chloride		4.96	ug/L	1.0	99	70	130			
Styrene		5.12	ug/L	1.0	102	70	130			
1,1,1,2-Tetrachloroethane		5.20	ug/L	1.0	104	70	130			
1,1,2,2-Tetrachloroethane		5.20	ug/L	1.0	104	70	130			
Tetrachloroethene		4.96	ug/L	1.0	99	70	130			
Toluene		5.20	ug/L	1.0	104	70	130			
1,1,1-Trichloroethane		6.64	ug/L	1.0	133	70	130			S
1,1,2-Trichloroethane		5.12	ug/L	1.0	102	70	130			
Trichloroethene		5.28	ug/L	1.0	106	70	130			
Trichlorofluoromethane		5.32	ug/L	1.0	106	70	130			
1,2,3-Trichloropropane		6.24	ug/L	1.0	125	70	130			
Vinyl acetate		5.52	ug/L	1.0	110	70	130			
Vinyl chloride		5.08	ug/L	1.0	102	70	130			
m+p-Xylenes		11.0	ug/L	1.0	110	70	130			
o-Xylene		5.16	ug/L	1.0	103	70	130			
Xylenes, Total		16.1	ug/L	1.0	107	70	130			
Surr: 1,2-Dichloroethane-d4				1.0	98	70	130			
Surr: Dibromofluoromethane				1.0	99	70	130			
Surr: p-Bromofluorobenzene				1.0	101	70	130			
Surr: Toluene-d8				1.0	104	70	130			
Sample ID: MB100610A										10/06/10 15:40
54 Method Blank										Run: 1SATURN_101006A
Acetone		ND	ug/L	20						
Acrylonitrile		ND	ug/L	20						
Benzene		ND	ug/L	0.50						
Bromochloromethane		ND	ug/L	0.50						
Bromodichloromethane		ND	ug/L	0.50						
Bromoform		ND	ug/L	0.50						
Bromomethane		ND	ug/L	0.50						
Carbon disulfide		ND	ug/L	0.50						
Carbon tetrachloride		ND	ug/L	0.50						
Chlorobenzene		ND	ug/L	0.50						
Chlorodibromomethane		ND	ug/L	0.50						
Chloroethane		ND	ug/L	0.50						
Chloroform		ND	ug/L	0.50						
Chloromethane		ND	ug/L	0.50						
1,2-Dibromo-3-chloropropane		ND	ug/L	0.50						
1,2-Dibromoethane		ND	ug/L	0.50						
Dibromomethane		ND	ug/L	0.50						
1,2-Dichlorobenzene		ND	ug/L	0.50						
1,4-Dichlorobenzene		ND	ug/L	0.50						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/20/10
Work Order: H10100021

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65965
Sample ID: MB100610A	54	Method Blank		Run: 1SATURN_101006A						10/06/10 15:40
trans-1,4-Dichloro-2-butene		ND	ug/L	0.50						
Dichlorodifluoromethane		ND	ug/L	0.50						
1,1-Dichloroethane		ND	ug/L	0.50						
1,2-Dichloroethane		ND	ug/L	0.50						
1,1-Dichloroethene		ND	ug/L	0.50						
cis-1,2-Dichloroethene		ND	ug/L	0.50						
trans-1,2-Dichloroethene		ND	ug/L	0.50						
1,2-Dichloropropane		ND	ug/L	0.50						
cis-1,3-Dichloropropene		ND	ug/L	0.50						
trans-1,3-Dichloropropene		ND	ug/L	0.50						
Ethylbenzene		ND	ug/L	0.50						
2-Hexanone		ND	ug/L	20						
Iodomethane		ND	ug/L	0.50						
Methyl ethyl ketone		ND	ug/L	20						
Methyl isobutyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	0.50						
Styrene		ND	ug/L	0.50						
1,1,1,2-Tetrachloroethane		ND	ug/L	0.50						
1,1,2,2-Tetrachloroethane		ND	ug/L	0.50						
Tetrachloroethene		ND	ug/L	0.50						
Toluene		ND	ug/L	0.50						
1,1,1-Trichloroethane		ND	ug/L	0.50						
1,1,2-Trichloroethane		ND	ug/L	0.50						
Trichloroethene		ND	ug/L	0.50						
Trichlorofluoromethane		ND	ug/L	0.50						
1,2,3-Trichloropropane		ND	ug/L	0.50						
Vinyl acetate		ND	ug/L	0.50						
Vinyl chloride		ND	ug/L	0.50						
m+p-Xylenes		ND	ug/L	0.50						
o-Xylene		ND	ug/L	0.50						
Xylenes, Total		ND	ug/L	0.50						
Surr: 1,2-Dichloroethane-d4				1.0	100	70	130			
Surr: Dibromofluoromethane				1.0	104	70	130			
Surr: p-Bromofluorobenzene				1.0	104	70	130			
Surr: Toluene-d8				1.0	110	70	130			
Sample ID: H10100021-001AMS	54	Sample Matrix Spike		Run: 1SATURN_101006A						10/06/10 17:57
Acetone		109	ug/L	40	109	70	130			
Acrylonitrile		110	ug/L	40	110	70	130			
Benzene		9.92	ug/L	2.0	99	70	130			
Bromochloromethane		12.8	ug/L	2.0	128	70	130			
Bromodichloromethane		10.7	ug/L	2.0	107	70	130			
Bromoform		10.8	ug/L	2.0	108	70	130			
Bromomethane		13.8	ug/L	2.0	138	70	130			S

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/20/10
Work Order: H10100021

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65965
Sample ID: H10100021-001AMS	54	Sample Matrix Spike		Run: 1SATURN_101006A						10/06/10 17:57
Carbon disulfide		10.6	ug/L	2.0	106	70	130			
Carbon tetrachloride		11.1	ug/L	2.0	111	70	130			
Chlorobenzene		10.4	ug/L	2.0	104	70	130			
Chlorodibromomethane		10.2	ug/L	2.0	102	70	130			
Chloroethane		9.76	ug/L	2.0	98	70	130			
Chloroform		12.0	ug/L	2.0	120	70	130			
Chloromethane		10.9	ug/L	2.0	109	70	130			
1,2-Dibromo-3-chloropropane		9.76	ug/L	2.0	98	70	130			
1,2-Dibromoethane		10.1	ug/L	2.0	101	70	130			
Dibromomethane		10.7	ug/L	2.0	107	70	130			
1,2-Dichlorobenzene		10.3	ug/L	2.0	103	70	130			
1,4-Dichlorobenzene		10.6	ug/L	2.0	106	70	130			
trans-1,4-Dichloro-2-butene		9.84	ug/L	2.0	98	70	130			
Dichlorodifluoromethane		10.2	ug/L	2.0	102	70	130			
1,1-Dichloroethane		10.7	ug/L	2.0	107	70	130			
1,2-Dichloroethane		9.92	ug/L	2.0	99	70	130			
1,1-Dichloroethene		11.1	ug/L	2.0	111	70	130			
cis-1,2-Dichloroethene		10.7	ug/L	2.0	107	70	130			
trans-1,2-Dichloroethene		10.7	ug/L	2.0	107	70	130			
1,2-Dichloropropane		11.0	ug/L	2.0	110	70	130			
cis-1,3-Dichloropropene		11.0	ug/L	2.0	110	70	130			
trans-1,3-Dichloropropene		10.1	ug/L	2.0	101	70	130			
Ethylbenzene		11.0	ug/L	2.0	110	70	130			
2-Hexanone		96.0	ug/L	40	96	70	130			
Iodomethane		9.04	ug/L	2.0	90	70	130			
Methyl ethyl ketone		105	ug/L	40	105	70	130			
Methyl isobutyl ketone		97.6	ug/L	40	98	70	130			
Methylene chloride		10.1	ug/L	2.0	101	70	130			
Styrene		10.2	ug/L	2.0	102	70	130			
1,1,1,2-Tetrachloroethane		10.2	ug/L	2.0	102	70	130			
1,1,2,2-Tetrachloroethane		10.8	ug/L	2.0	108	70	130			
Tetrachloroethene		10.9	ug/L	2.0	109	70	130			
Toluene		10.7	ug/L	2.0	107	70	130			
1,1,1-Trichloroethane		13.2	ug/L	2.0	132	70	130			S
1,1,2-Trichloroethane		10.0	ug/L	2.0	100	70	130			
Trichloroethene		10.6	ug/L	2.0	106	70	130			
Trichlorofluoromethane		11.1	ug/L	2.0	111	70	130			
1,2,3-Trichloropropane		10.7	ug/L	2.0	107	70	130			
Vinyl acetate		10.6	ug/L	2.0	106	70	130			
Vinyl chloride		8.88	ug/L	2.0	89	70	130			
m+p-Xylenes		21.4	ug/L	2.0	107	70	130			
o-Xylene		10.6	ug/L	2.0	106	70	130			
Xylenes, Total		32.1	ug/L	2.0	107	70	130			
Surr: 1,2-Dichloroethane-d4				2.0	98	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/20/10
Work Order: H10100021

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65965
Sample ID: H10100021-001AMS	54	Sample Matrix Spike		Run: 1SATURN_101006A				10/06/10 17:57		
Surr: Dibromofluoromethane				2.0	104	70	130			
Surr: p-Bromofluorobenzene				2.0	108	70	130			
Surr: Toluene-d8				2.0	110	70	130			
Sample ID: H10100021-001AMSD	54	Sample Matrix Spike Duplicate		Run: 1SATURN_101006A				10/06/10 18:27		
Acetone		107	ug/L	40	107	70	130	1.5	20	
Acrylonitrile		110	ug/L	40	110	70	130	0	20	
Benzene		9.92	ug/L	2.0	99	70	130	0	20	
Bromochloromethane		12.6	ug/L	2.0	126	70	130	1.9	20	
Bromodichloromethane		9.84	ug/L	2.0	98	70	130	8.6	20	
Bromoform		10.2	ug/L	2.0	102	70	130	5.3	20	
Bromomethane		13.4	ug/L	2.0	134	70	130	2.4	20	S
Carbon disulfide		10.6	ug/L	2.0	106	70	130	0	20	
Carbon tetrachloride		10.3	ug/L	2.0	103	70	130	7.5	20	
Chlorobenzene		10.5	ug/L	2.0	105	70	130	0.8	20	
Chlorodibromomethane		9.68	ug/L	2.0	97	70	130	4.8	20	
Chloroethane		9.44	ug/L	2.0	94	70	130	3.3	20	
Chloroform		12.2	ug/L	2.0	122	70	130	1.3	20	
Chloromethane		10.4	ug/L	2.0	104	70	130	4.5	20	
1,2-Dibromo-3-chloropropane		8.72	ug/L	2.0	87	70	130	11	20	
1,2-Dibromoethane		9.20	ug/L	2.0	92	70	130	9.1	20	
Dibromomethane		10.0	ug/L	2.0	100	70	130	6.9	20	
1,2-Dichlorobenzene		9.52	ug/L	2.0	95	70	130	8.1	20	
1,4-Dichlorobenzene		10.1	ug/L	2.0	101	70	130	5.4	20	
trans-1,4-Dichloro-2-butene		9.76	ug/L	2.0	98	70	130	0.8	20	
Dichlorodifluoromethane		10.8	ug/L	2.0	108	70	130	6.1	20	
1,1-Dichloroethane		10.2	ug/L	2.0	102	70	130	4.6	20	
1,2-Dichloroethane		9.68	ug/L	2.0	97	70	130	2.4	20	
1,1-Dichloroethene		10.6	ug/L	2.0	106	70	130	4.4	20	
cis-1,2-Dichloroethene		10.8	ug/L	2.0	108	70	130	0.7	20	
trans-1,2-Dichloroethene		10.2	ug/L	2.0	102	70	130	4.6	20	
1,2-Dichloropropane		9.92	ug/L	2.0	99	70	130	11	20	
cis-1,3-Dichloropropene		9.68	ug/L	2.0	97	70	130	12	20	
trans-1,3-Dichloropropene		9.28	ug/L	2.0	93	70	130	8.3	20	
Ethylbenzene		10.7	ug/L	2.0	107	70	130	2.2	20	
2-Hexanone		92.8	ug/L	40	93	70	130	3.4	20	
Iodomethane		9.20	ug/L	2.0	92	70	130	1.8	20	
Methyl ethyl ketone		106	ug/L	40	106	70	130	1.5	20	
Methyl isobutyl ketone		94.4	ug/L	40	94	70	130	3.3	20	
Methylene chloride		9.68	ug/L	2.0	97	70	130	4	20	
Styrene		9.92	ug/L	2.0	99	70	130	3.2	20	
1,1,1,2-Tetrachloroethane		10.1	ug/L	2.0	101	70	130	1.6	20	
1,1,2,2-Tetrachloroethane		9.60	ug/L	2.0	96	70	130	12	20	
Tetrachloroethene		10.4	ug/L	2.0	104	70	130	4.5	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

QA/QC Summary Report

Client: Hydrometrics Inc
Project: 1273 City of Helena

Report Date: 10/20/10
Work Order: H10100021

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8260B										Batch: R65965
Sample ID: H10100021-001AMSD 54 Sample Matrix Spike Duplicate										Run: 1SATURN_101006A 10/06/10 18:27
Toluene		10.1	ug/L	2.0	101	70	130	6.2	20	
1,1,1-Trichloroethane		12.8	ug/L	2.0	128	70	130	3.1	20	
1,1,2-Trichloroethane		9.44	ug/L	2.0	94	70	130	5.8	20	
Trichloroethene		10.1	ug/L	2.0	101	70	130	4.7	20	
Trichlorofluoromethane		10.8	ug/L	2.0	108	70	130	2.9	20	
1,2,3-Trichloropropane		12.6	ug/L	2.0	126	70	130	16	20	
Vinyl acetate		11.2	ug/L	2.0	112	70	130	5.9	20	
Vinyl chloride		9.04	ug/L	2.0	90	70	130	1.8	20	
m+p-Xylenes		21.0	ug/L	2.0	105	70	130	2.3	20	
o-Xylene		10.1	ug/L	2.0	101	70	130	5.4	20	
Xylenes, Total		31.0	ug/L	2.0	103	70	130	3.3	20	
Surr: 1,2-Dichloroethane-d4				2.0	95	70	130	0	20	
Surr: Dibromofluoromethane				2.0	98	70	130	0	20	
Surr: p-Bromofluorobenzene				2.0	102	70	130	0	20	
Surr: Toluene-d8				2.0	105	70	130	0	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Workorder Receipt Checklist



H10100021

Hydrometrics Inc

Login completed by: Tracy L. Lorash

Date Received: 10/1/2010

Reviewed by: BL2000\ablackburn

Received by: rlt

Reviewed Date: 10/4/2010

Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature:	3.0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Contact and Corrective Action Comments:

None



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[illegible]

